Drinking Water Surveillance Program

HAMILTON WATER SUPPLY SYSTEM

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HAMILTON
WATER SUPPLY SYSTEM

DRINKING WATER SURVEILLANCE PROGRAM

ANNUAL REPORT 1988

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EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM

HAMILTON WATER SUPPLY SYSTEM
1988 ANNUAL REPORT

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. Currently, 52 plants are being monitored.

The Hamilton Water Treatment Plant is a conventional treatment plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, sedimentation, filtration, disinfection and fluoridation. This plant has a design capacity of 909 x 1000 m^3/day and serves a population of approximately 412,000.

Water samples from the raw, treated and two distribution sites were taken on a monthly basis and analysed for approximately 160 parameters, during 1988. Parameters were divided into the following groups Bacteriological, Inorganic and Physical(Laboratory Chemistry, Field Chemistry and Metals) and Organics (Chloroaromatics, Chlorophenols, Pesticides and PCB, Phenolics, Polynuclear Aromatic Hydrocarbons, Specific Pesticides and Volatiles). Specific Pesticides and Chlorophenols were analysed for in June and November only.

A summary of results is shown in Table 1.

Inorganic and Physical parameters (Laboratory Chemistry, Field Chemistry and Metals) were below any applicable health related ODWOs.

Of approximately 110 Organic parameters tested for on a monthly basis, none exceeded health related guidelines.

During 1988 the DWSP sampling results indicated that the Hamilton Water Supply System produced good quality water at the plant and this quality was maintained in the distribution system.

TABLE 1

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS

SUMMARY TABLE BY SCAN

SCAN	RAW			TREATED			SITE 1			SITE 2		
	TESTS	POSITIVE	%POSITIVE	TESTS	POSITIVE	%POSITIVE	TESTS	POSITIVE	%POSITIVE	TESTS	POSITIVE	%POSITIVE
BACTERIOLOGICAL	44	38	86	44	11	25	44	8	18	44	10	22
CHEMISTRY (FLD)	42	39	92	61	59	96	98	94	95	81	79	97
CHEMISTRY (LAB)	246	201	81	243	188	76	432	368	85	398	340	85
METALS	288	171	59	288	167	57	564	337	59	564	319	56
CHLOROAROMATICS	154	0	0	140	0	0	154	0	0	154	0	0
CHLOROPHENOLS	6	0	0	6	0	0	.	.	.	.	.	.
PAH	204	0	0	204	0	0	.	.	.	.	.	.
PESTICIDES & PCB	375	0	0	354	0	0	375	0	0	375	0	0
PHENOLICS	12	6	50	12	3	25	.	.	.	.	.	.
SPECIFIC PESTICIDES	28	0	0	28	0	0	0	0	0	0	0	0
VOLATILES	284	1	0	282	36	12	253	32	12	282	36	12
TOTAL	1683	456		1665	464		1920	839		1898	784	

NO HEALTH RELATED GUIDELINES WERE EXCEEDED

A POSITIVE VALUE DENOTES THAT THE RESULT IS GREATER THAN THE STATISTICAL LIMIT OF DETECTION AND IS QUANTIFIABLE
A '.' INDICATES THAT NO SAMPLE WAS TAKEN

DRINKING WATER SURVEILLANCE PROGRAM

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INTRODUCTION

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. Currently, 52 plants are being monitored. The DWSP program was initiated at the Hamilton Water Treatment Plant in the spring of 1986. Annual reports were published for 1986 (ISBN 0-7729-2554-2) and 1987 (ISSN 0839-9034).

This report contains information and results for 1988.

PLANT DESCRIPTION

The Hamilton Water Treatment Plant is a conventional treatment plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, sedimentation, filtration, disinfection and fluoridation. Ammoniation is used to produce a long-lasting chloramine residual in the distribution system. Sulphur Dioxide is used as a dechlorinator when necessary.

This plant has a design capacity of 909 x 1000 m^3/day and flows on day of sampling ranging from 176 x 1000 m^3/day to 329 x 1000 m^3/day. The plant serves a population of 412,000.

The plant location is shown in Figure 1. Plant Process details, in a block schematic, are shown in Figure 2. General plant information is presented in Table 2.

METHODS

Water samples were obtained from four DWSP approved locations;

i) Plant Raw - The water originated from the surge well prior to chlorination and was sampled through a copper line. The sample tap is located in the plant laboratory.

ii) Plant Treated - The water originated from the highlift discharge after addition of all treatment chemicals and was sampled through a copper line. The sample tap is located in the plant laboratory.

iii) Distribution System - Site 1 - This house is approximately 1 kilometer from the plant. Water was sampled through copper plumbing from the basement laundry tap.

FIGURE 1

DRINKING WATER SURVEILLANCE PROGRAM

SITE LOCATION MAP

HAMILTON WATER TREATMENT PLANT

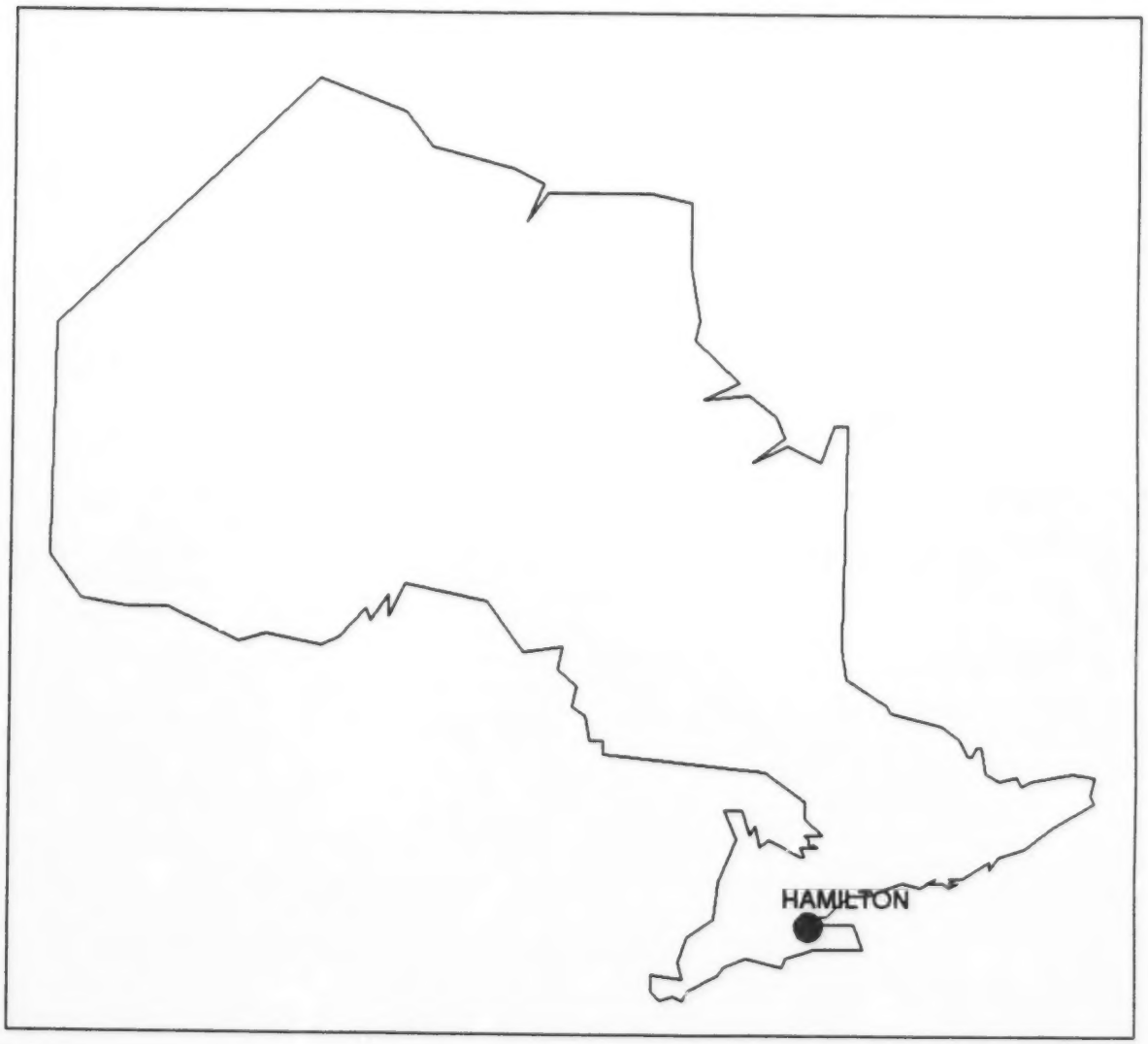

Figure 2

HAMILTON WATER TREATMENT PLANT

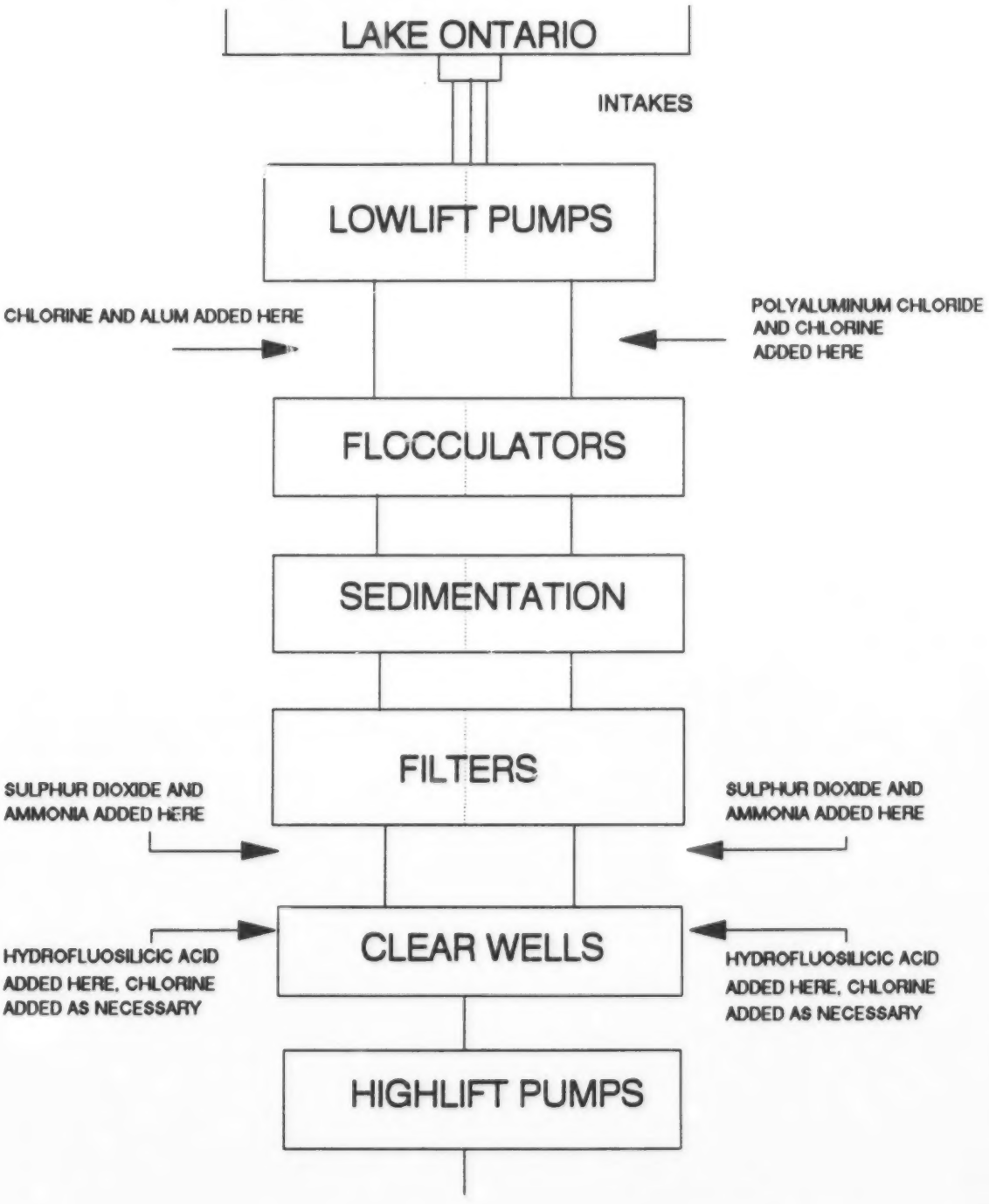

TABLE 2

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORT

GENERAL INFORMATION

HAMILTON WATER SUPPLY SYSTEM

LOCATION:	900 WOODWARD AVE HAMILTON, ONTARIO L8H 7N2 (416-526-4484)
SOURCE:	RAW WATER SOURCE - LAKE ONTARIO
RATED CAPACITY:	909 (1000 M^3/DAY)
OPERATION:	MUNICIPAL
PLANT SUPERINTENDENT:	W. FURRY
MINISTRY REGION:	WEST CENTRAL
DISTRICT OFFICER:	MR. J.W. VOGT

MUNICIPALITY SERVED	POPULATION
ANCASTER	16,542
DUNDAS TOWN	20,081
HAMILTON	307,690
STONEY CREEK	41,690
WATERDOWN	25,541

iv) Distribution System - Site 2 - This house is approximately 14 kilometers from the plant. Water was sampled through copper plumbing from the basement laundry tap.

Sample lines in the plant were flushed prior to sampling to ensure that the water obtained was indicative of its origin and not residual water standing in the sample line.

At both distribution system locations two types of samples were obtained: a standing and a free flow. The standing sample consisted of water that had been in the household plumbing and service connection for a minimum of six hours. These samples are used to make an assessment of the amount by which the levels of inorganic compounds and metals may be changed on standing due to leaching from (or deposition on) the plumbing system. The only analyses carried out on the standing samples therefore, are General Chemistry and Metals. The free flow sample represented fresh water from the distribution main that had been flowing at the sample tap for five minutes before being sampled.

Attempts were made to capture the same block of water at each sampling point by taking the retention time into consideration. The retention time was calculated by dividing the volume of water between the two sampling points by the sample day flow. For example, if it was determined that the retention time within the

plant was five hours then there would be a five hour interval between the raw and treated sampling. Similarly if it was estimated that it took approximately one day for the water to travel from the plant to the distribution system site, this site would be sampled one day after the treated water from the plant.

Stringent DWSP sampling protocols were followed to ensure that all samples were taken in a uniform manner.

Sample day flow, treatment chemical dosages and Field Chemistry measurements were recorded on the day of sampling and were entered on the DWSP database as submitted.

RESULTS

Water at the Hamilton Water Treatment Plant and two sites in the distribution system was sampled for approximately 160 parameters on a monthly basis. The Specific Pesticides and Chlorophenols scans were sampled in June and November only. Polynuclear Aromatic Hydrocarbons and Phenolics were only analysed in the raw and treated water at the plant. As a result of an unforeseen emergency the laboratory capacity was exceeded and analysis for volatiles could not be carried out when the samples were received. Since analysis for volatiles is no longer valid after four weeks of storage, volatile results for January or February are not available.

Table 3 contains information on the sample day retention time, flow rate and treatment chemicals used and their associated dosages.

Table 4 is a summary break-down of the number of water samples analysed by parameter and by water type. The number of times that a positive or trace result was detected is also reported. Positive denotes that the result is greater than the statistical limit of detection established by the Ministry of the Environment (MOE) laboratory staff and is quantifiable. Trace (<T) denotes that the level measured is greater than the lowest value detectable by the method but lies so close to the detection limit that it cannot be confidently quantified.

Table 5 presents the results for parameters detected on at least one occasion.

Table 6 lists all parameters analysed in the DWSP.

Associated guidelines and detection limits are also supplied on tables 5 and 6. Parameters are listed alphabetically within each scan.

DISCUSSION

General

Water quality is judged by comparison with the Ontario Drinking Water Objectives (ODWOs) as defined in the 1984 publication (ISBN 0-7743-8985-0). The Province of Ontario has health related and aesthetic objectives for 49 parameters. These are currently under review. When an ODWO is not available guidelines/limits from other agencies are consulted. The Parameter Listing System (PALIS) recently published (ISBN 0-7729-4461-X) by the MOE catalogues and keeps current over 1750 guidelines for 650 parameters from agencies throughout the world.

Although some of the parameters measured on DWSP may be present in the raw and treated water as a result of pollution, many of the compounds detected are naturally occurring or are treatment by-products.

Plant operational personnel address occurrences of taste and odour or biological water quality parameters. The DWSP does not assess these aspects of the water supply.

As stated under Results, traces do not indicate quantifiable values, as defined by established MOE Laboratory analytical reporting protocols. While they can be useful in trend analysis or confirmation of a specific contaminant that is repeatedly

detected at these levels, the occasional finding of a trace level of a contaminant is not considered to be significant. **DISCUSSION OF GUIDELINES AND LIMITS THEREFORE, IS ONLY CONDUCTED ON POSITIVE RESULTS.**

Bacteriology

Positive results for the Bacteriology scan were present eleven times in the treated water, eight times in the Site 1 water and ten times the Site 2 water. The positive parameters were Standard Plate Count and Total Coliform Background. The results show that bacteriological quality control was achieved at the plant and maintained in the distribution system.

Guidelines for bacteriological sampling and testing of a supply are developed to maintain a proper supervision of its bacteriological quality; the routine monitoring program usually requires the taking of multiple samples in a given system. Full interpretation of bacteriological quality cannot be made on the basis of single samples. Routine bacteriological monitoring, as outlined in the ODWOs is carried out by the operating authority.

Inorganic and Physical Parameters

Laboratory and Field Chemistry

The results for Laboratory and Field Chemistry scans were below any applicable health related ODWOs.

The Total Ammonium levels are high, not as a result of naturally occurring ammonia (eg. from sewage pollution) but from the ammonia added in the treatment process. The anhydrous ammonia is added prior to the post-chlorination to provide a long lasting combined chloramine residual in the distribution system. While the European Economic Community has an aesthetic guideline of .05 mg/L, the Maximum Admissable Concentration is .50 mg/L and is set as a result of the concern for potential sewage pollution and its detection.

It is desirable that the Temperature of drinking water be less than 15°C; the palatability of water is enhanced by its coolness. A temperature below 15°C will tend to reduce the growth of nuisance organisms and hence minimize associated taste, colour, odour and corrosion problems. The temperature of the delivered water may increase in the distribution system due to the warming effect of the soil in late summer and fall and/or as a result of higher temperatures in the source water. The desired ODWO was exceeded eight times in the treated water and free flow distributed water.

Colour values exceeded the aesthetic ODWO of 5 True Colour Units

(TCU) in the September treated water sample at 7.5 TCU and the Site 1 water sample at 5.5 TCU. Colour in drinking water may be due to the presence of natural or synthetic organic substances as well as certain metallic ions.

The ODWO indicate that a hardness level of between 80 and 100 mg/L as calcium carbonate for domestic waters, provides an acceptable balance between corrosion and incrustation. Water supplies with a hardness greater than 200 mg/L are considered poor, and would possess a tendency to form scale deposits and result in excessive soap consumption. The Hamilton water had hardness values ranging from 129 mg/L to 145 mg/L as $CaCO_3$.

The Langelier Index is used extensively in estimating the corrosion potential of water. An increasingly negative index indicates the increasing possibility of corrosion. It is considered sound engineering practice to maintain a slightly positive Langelier Index. The Langelier Index for Hamilton is consistently positive.

As part of the treatment plant process, hydrofluosilicic acid is added to the treated water (Table 3). Where fluoridation is practised, the fluoride concentration recommended in the ODWO is 1.2 mg/L, plus or minus 0.2 mg/L. Results indicate that the plant was rarely successful in mairtaining this level as can be seen from the fluoride levels in Table 5. The plant reported that for two months, hydrofluosilicic acid was not available from the supplier.

The fluoride feed equipment was undergoing maintenance for one other month when hydrofluorosilcic acid was not reported to have been added.

Metals

The results reported for the Metal scan were below any applicable health related ODWOs.

Elevated levels of Copper, Lead and Zinc were detected in the standing samples from the distribution system as compared to the free flow samples thus, indicating that small quantities of these metals were leached from the household plumbing as the water stood overnight. Although the Langelier Index indicates minimal potential for corrosion some metals will be leached in standing samples in most supplies.

The ODWO for Chromium of 50 ug/L was exceeded in the February treated water sample at 470 ug/L and in the November treated water sample at 190 ug/L. Samples taken in the distribution system for the same time period did not show elevated levels of chromium. Sample contamination is the suspected cause for the elevated Chromium levels. The District Officer was notified.

At present, there is no evidence that Aluminum is physiologically harmful and no health limit for drinking water has been specified. The measure of residual Aluminum in the treated water is important

to indicate the efficiency of the treatment process. The ODWOs indicate that a useful guideline is to maintain a residual below 100 ug/L as Al in the water leaving the plant to avoid problems in the distribution system. Aluminum values exceeded the ODWO operational guideline four times in the treated water.

Organic Parameters

Chloroaromatics

Results of the Chloroaromatics scan showed that one parameter was detected:

Hexachloroethane

Hexachloroethane was detected at a trace level, once in the Site 2 water.

Review of these results, along with information from other water supplies on DWSP, would indicate that certain Chloroaromatics appear more frequently in the treated water than in the raw and almost always only at trace levels. These occurrences could possibly be due to a reaction of chlorine with organics present in the water or the distribution system.

Chlorophenols

Results of the Chlorophenol scan showed that no Chlorophenols were detected.

Pesticides and PCB (Polychlorinated Biphenyl)

Results of the Pesticide and PCB scan showed that no PCBs were detected and that three pesticides were detected:

Alpha BHC

Lindane

Atrazine

There are several isomers of BHC (Benzene Hexachloride); gamma BHC is the active ingredient of the pesticide Lindane, while alpha BHC is the isomer predominantly found in surface waters of the Great Lakes basin.

Alpha BHC was detected at trace levels, eight times in the raw water, eight times in the treated water, nine times in the Site 1 water and eight times in the Site 2 water.

Lindane was detected at trace levels, three times in the raw water, three times in the treated water, five times in the Site 1 water and four times in the Site 2 water.

Atrazine was detected at trace levels, twice in the raw water and once in the treated water.

Specific Pesticides

Results of the Specific Pesticide scan showed that no specific pesticides were detected.

Phenolics

The maximum desirable concentration of phenolic substances in drinking water is 2.0 ug/L. This limit has been set primarily to prevent the occurrence of undesirable tastes and odours, particularly in chlorinated water. Phenolics were detected in the raw water at quantifiable levels ranging from 1.0 to 2.0 ug/L and in the treated water ranging from 1.0 tp 1.6 ug/L. Phenolics were also detected at trace levels, four times in the raw water and seven times in the treated water. Phenolic compounds are present in the aquatic environment as a result of natural and/or industrial processes.

Polynuclear Aromatic Hydrocarbons (PAH)

Results of the PAH scan showed that one PAH was detected:

Benzo (E) Pyrene

Benzo (E) Pyrene was detected at a trace level, once in the raw water.

Volatiles

Results of the Volatile scan showed that seven parameters, other than Trihalomethanes(THMs), were detected:

Toluene

Ethylbenzene

Meta-Xylene

Ortho-Xylene

Styrene

Trans 1,2-Dichloroethylene

Tetrachloroethylene

Toluene was detected at trace levels, once in the raw water, twice in the treated water and four times in both the Site 1 water and Site 2 water. The detection of toluene at low, trace levels is a laboratory artifact derived from the analytical methodology. The purge-and-trap analytical technique depends on the purging of the volatile organics in the water sample with helium gas onto a Tenax trapping column. The volatile materials are subsequently thermally desorbed, separated and quantified. Tenax, a toluene-like polymeric material, tends to decompose sporadically upon heating into toluene and other aromatic componenets (ethylbenzene and xylene) giving instrument blanks in the order of 0.05 ug/L.

The detected trace levels of Styrene are also considered to be laboratory artifacts due to the outgassing of monomeric styrene from the polystyrene shipping containers. The sporadic background levels from this source are in the order of 0.05 ug/L.

Ethylbenzene was detected at trace levels, once in the raw water,

five times in the treated water, seven times in the Site 1 water and six times in the Site 2 water.

Meta-Xylene(M-Xylene) was detected at trace levels, once in the raw water and twice in the Site 1 water.

Ortho-Xylene (O-Xylene) was detected at trace levels, once in the raw water and once in the treated water.

The volatiles listed above are typically found on an occasional basis at other water supplies included on the DWSP usually at trace levels.

Trans(T) 1,2-Dichloroethylene was detected at a trace level, once in the treated water.

Tetrachloroethylene (T-Chloroethylene) was detected in the April treated water sample at 4.0 ug/L. The World Health Organization's (WHO) tentative guideline value for tetrachloroethylene in drinking water is 10.0 ug/L.

THMs are known to be produced during the water treatment process and will always occur in chlorinated surface waters. THMs are comprised of Chloroform, Chlorodibromomethane and Dichlorobromomethane. Bromoform occurs occasionally. Results are reported for the individual compounds as well as for total THMs.

Chloroform, Chlorodibromomethane, Dichlorobromomethane and Total THMs were detected in all treated waters. Bromoform was detected at trace levels in all but two Site 2 samples. All Total THM occurrences, ranging from 18.3 to 51.7 ug/L, were well below the ODWO of 350 ug/L.

CONCLUSIONS

The Hamilton Water Supply System for the sample year of 1988 produced good quality water at the plant and this quality was maintained in the distribution system.

Raw and treated water quality from 1986 to 1988 has remained consistent.

No health related guidelines, for organic or inorganic parameters, were exceeded during 1986, 1987 or 1988.

RECOMMENDATIONS

Three recommendations can be made:

1) The reason for elevated Aluminum levels in treated water samples should be investigated.

2) The fluoridation practice should be adjusted to ensure that the recommended fluoride levels are achieved in distributed water.

3) Consideration should be given to reducing sample frequency.

TABLE 3

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS SAMPLE DAY CONDITIONS FOR 1988

	SAMPLE DAY CONDITIONS		TREATMENT CHEMICAL DOSAGES (MG/L)					
			PRE-CHLORINATION	COAGULATION	COAGULATION		POST-CHLORINATION	FLUORIDATION
			CHLORINE	ALUM LIQUID	POLYALUMINUM CHLORIDE	POLYALUMINUM SULPHATE	CHLORINE	HYDROFLUOSILICIC ACID
DATE	RETENTION TIME(HRS)	FLOW (1000M3)						
JAN 26	6.0	207.5	1.40	3.00	.	.	.	.98
FEB 23	2.0	215.7	1.30	.	.50	.	.28	.98
MAR 29	2.5	242.1	1.80	3.00	.	.	.45	1.01
APR 27	5.6	175.6	1.70	4.00	.50	.	.48	1.05
MAY 25	4.0	215.8	2.50	4.30	.68	.	.33	1.03
JUN 29	3.5	329.5	3.00	3.40	.70	.	.35	.84
JUL 27	3.4	244.7	1.50	.	6.00	6.00	.24	.
AUG 23	3.5	255.0	2.80	4.50	.	.	.68	1.02
SEP 27	4.0	239.3	2.20	5.50	.	.	.41	.
OCT 26	4.0	251.0	1.80	4.00	1.00	.	.14	.
NOV 30	6.0	216.6	1.70	3.80	1.33	.	.33	1.14
DEC 19	4.5	213.5	1.90	3.60	.67	.	.24	1.19

ANHYDROUS AMMONIA WAS ADDED ON A CONTINUOUS BASIS AT .30 MG/L

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW			TREATED			SITE 1			SITE 2		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
BACTERIOLOGICAL	FECAL COLIFORM MF	12	7	0	.	.	.	.	.	.	.	.	.
	STANDRD PLATE CNT MF	8	7	0	12	10	0	12	8	0	12	10	0
	P/A BOTTLE	.	.	.	8	0	0	8	0	0	8	0	0
	TOTAL COLIFORM MF	12	12	0	12	0	0	12	0	0	12	0	0
	T COLIFORM BCKGRD MF	12	12	0	12	1	0	12	0	0	12	0	0
*TOTAL SCAN BACTERIOLOGICAL		44	38	0	44	11	0	44	8	0	44	10	0
*TOTAL GROUP BACTERIOLOGICAL		44	38	0	44	11	0	44	8	0	44	10	0
CHEMISTRY (FLD)	FLD CHLORINE (COMB)	2	1	0	12	11	0	21	19	0	15	15	0
	FLD CHLORINE FREE	2	1	0	1	0	0	4	2	0	4	2	0
	FLD CHLORINE (TOTAL)	2	1	0	12	12	0	21	21	0	15	15	0
	FLD PH	12	12	0	12	12	0	20	20	0	23	23	0
	FLD TEMPERATURE	12	12	0	12	12	0	24	24	0	24	24	0
	FLD TURBIDITY	12	12	0	12	12	0	8	8	0	.	.	.
*TOTAL SCAN CHEMISTRY (FLD)		42	39	0	61	59	0	98	94	0	81	79	0
CHEMISTRY (LAB)	ALKALINITY	12	12	0	12	12	0	24	24	0	22	22	0
	CALCIUM	12	12	0	12	12	0	24	24	0	22	22	0
	CYANIDE	12	0	0	12	0	0	12	0	0	12	0	0
	CHLORIDE	12	12	0	12	12	0	24	24	0	22	22	0
	COLOUR	12	5	7	12	2	10	24	4	20	22	3	18

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
CHEMISTRY (LAB)	CONDUCTIVITY	12	12	0	12	12	0	24	24	0	22	22	0
	FLUORIDE	12	12	0	12	12	0	24	24	0	22	22	0
	HARDNESS	12	12	0	12	12	0	24	24	0	22	22	0
	IONCAL	12	6	0	12	6	0	24	12	0	24	10	0
	LANGELIERS INDEX	12	12	0	12	12	0	24	24	0	22	22	0
	MAGNESIUM	12	12	0	12	12	0	24	24	0	22	22	0
	SODIUM	12	12	0	12	12	0	24	24	0	22	22	0
	AMMONIUM TOTAL	12	9	3	12	12	0	24	24	0	22	21	0
	NITRITE	12	7	5	12	1	11	24	8	16	22	16	6
	TOTAL NITRATES	12	12	0	12	12	0	24	24	0	22	22	0
	NITROGEN TOT KJELD	12	12	0	12	12	0	24	24	0	22	22	0
	PH	12	12	0	12	12	0	24	24	0	22	22	0
	PHOSPHORUS FIL REACT	12	5	6	12	4	7	.	.	.	.	.	.
	PHOSPHORUS TOTAL	12	7	5	12	2	7	.	.	.	.	.	.
	SULPHATE	6	6	0	6	6	0	12	12	0	10	10	0
	TURBIDITY	12	12	0	12	11	1	24	20	4	22	16	6
*TOTAL SCAN CHEMISTRY (LAB)		246	201	26	246	188	36	432	368	40	398	340	30
METALS	SILVER	12	1	4	12	1	8	24	2	15	24	2	12
	ALUMINUM	12	12	0	12	12	0	24	24	0	24	24	0
	ARSENIC	12	8	4	12	5	7	24	14	10	24	7	17
	BARIUM	12	12	0	12	12	0	24	24	0	24	24	0
	BORON	12	12	0	12	12	0	24	24	0	24	23	1

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON

SUMMARY TABLE OF RESULTS (1988)

		SITE											
		RAW			TREATED			SITE 1			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
METALS	BERYLLIUM	12	1	6	12	1	6	24	2	7	24	2	10
	CADMIUM	12	1	0	12	1	1	24	2	4	24	2	4
	COBALT	12	1	10	12	1	9	24	2	19	24	2	17
	CHROMIUM	12	5	7	12	8	4	24	10	14	24	5	19
	COPPER	12	12	0	12	12	0	24	24	0	24	24	0
	IRON	12	1	11	12	1	9	24	6	18	24	2	15
	MERCURY	12	4	2	12	5	3	12	4	5	12	1	6
	MANGANESE	12	12	0	12	12	0	24	24	0	24	24	0
	MOLYBDENUM	12	12	0	12	12	0	24	24	0	24	24	0
	NICKEL	12	3	8	12	1	9	24	3	19	24	2	17
	LEAD	12	12	0	12	7	5	24	24	0	24	24	0
	ANTIMONY	12	11	1	12	11	1	24	23	1	24	23	1
	SELENIUM	12	1	9	12	1	11	24	2	21	24	2	19
	STRONTIUM	12	12	0	12	12	0	24	24	0	24	24	0
	TITANIUM	12	12	0	12	12	0	24	23	1	24	24	0
	THALLIUM	12	1	2	12	1	2	24	2	4	24	2	6
	URANIUM	12	12	0	12	12	0	24	24	0	24	24	0
	VANADIUM	12	1	11	12	3	9	24	2	22	24	4	20
	ZINC	12	12	0	12	12	0	24	24	0	24	24	0
*TOTAL SCAN METALS		288	171	75	288	167	84	564	337	160	564	319	164
*TOTAL GROUP INORGANIC & PHYSICAL		576	411	101	595	41[illegible]	120	1094	799	200	1043	738	194
CHLORO AROMATICS	HEXACHLOROBUTADIENE	11	0	0	10	0	0	11	0	0	11	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
CHLOROAROMATICS	123 TRICHLOROBENZENE	11	0	0	10	0	0	11	0	0	11	0	0
	1234 T-CHLOROBENZENE	11	0	0	10	0	0	11	0	0	11	0	0
	1235 T-CHLOROBENZENE	11	0	0	10	0	0	11	0	0	11	0	0
	124 TRICHLOROBENZENE	11	0	0	10	0	0	11	0	0	11	0	0
	1245 T-CHLOROBENZENE	11	0	0	10	0	0	11	0	0	11	0	0
	135 TRICHLOROBENZENE	11	0	0	10	0	0	11	0	0	11	0	0
	HCB	11	0	0	10	0	0	11	0	0	11	0	0
	HEXACHLOROETHANE	11	0	0	10	0	0	11	0	0	11	0	1
	OCTACHLOROSTYRENE	11	0	0	10	0	0	11	0	0	11	0	0
	PENTACHLOROBENZENE	11	0	0	10	0	0	11	0	0	11	0	0
	236 TRICHLOROTOLUENE	11	0	0	10	0	0	11	0	0	11	0	0
	245 TRICHLOROTOLUENE	11	0	0	10	0	0	11	0	0	11	0	0
	26A TRICHLOROTOLUENE	11	0	0	10	0	0	11	0	0	11	0	0
*TOTAL SCAN CHLOROAROMATICS		154	0	0	140	0	0	154	0	0	154	0	1
CHLOROPHENOLS	234 TRICHLOROPHENOL	1	0	0	1	0	0	.	.	.	.	.	.
	2345 T-CHLOROPHENOL	1	0	0	1	0	0	.	.	.	.	.	.
	2356 T-CHLOROPHENOL	1	0	0	1	0	0	.	.	.	.	.	.
	245-TRICHLOROPHENOL	1	0	0	1	0	0	.	.	.	.	.	.
	246-TRICHLOROPHENOL	1	0	0	1	0	0	.	.	.	.	.	.
	PENTACHLOROPHENOL	1	0	0	1	0	0	.	.	.	.	.	.
*TOTAL SCAN CHLOROPHENOLS		6	0	0	6	0	0	0	0	0	0	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON

SUMMARY TABLE OF RESULTS (1988)

		SITE											
		RAW			TREATED			SITE 1			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PAH	PHENANTHRENE	12	0	0	12	0	0	.	.	.	.	.	.
	ANTHRACENE	12	0	0	12	0	0	.	.	.	.	.	.
	FLUORANTHENE	12	0	0	12	0	0	.	.	.	.	.	.
	PYRENE	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(A)ANTHRACENE	12	0	0	12	0	0	.	.	.	.	.	.
	CHRYSENE	12	0	0	12	0	0	.	.	.	.	.	.
	DIMETH. BENZ(A)ANTHR	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(E) PYRENE	12	0	1	12	0	0	.	.	.	.	.	.
	BENZO(J) FLUORANTHEN	0	0	0	0	0	0	.	.	.	.	.	.
	BENZO(B) FLUORANTHEN	12	0	0	12	0	0	.	.	.	.	.	.
	PERYLENE	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(K) FLUORANTHEN	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(A) PYRENE	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(G,H,I) PERYLEN	12	0	0	12	0	0	.	.	.	.	.	.
	DIBENZO(A,H) ANTHRAC	12	0	0	12	0	0	.	.	.	.	.	.
	INDENO(1,2,3-C,D) PY	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(B) CHRYSENE	12	0	0	12	0	0	.	.	.	.	.	.
	ANTHANTHRENE	0	0	0	0	0	0	.	.	.	.	.	.
	CORONENE	12	0	0	12	0	0	.	.	.	.	.	.
*TOTAL SCAN PAH		204	0	1	204	0	0	0	0	0	0	0	0
PESTICIDES & PCB	ALDRIN	11	0	0	10	0	0	11	0	0	11	0	0
	ALPHA BHC	11	0	8	10	0	8	11	0	9	11	0	8

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON

SUMMARY TABLE OF RESULTS (1988)

		SITE											
		RAW			TREATED			SITE 1			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PESTICIDES & PCB	BETA BHC	11	0	0	10	0	0	11	0	0	11	0	0
	LINDANE	11	0	3	10	0	3	11	0	5	11	0	4
	ALPHA CHLORDANE	11	0	0	10	0	0	11	0	0	11	0	0
	GAMMA CHLORDANE	11	0	0	10	0	0	11	0	0	11	0	0
	DIELDRIN	11	0	0	10	0	0	11	0	0	11	0	0
	METHOXYCHLOR	11	0	0	10	0	0	11	0	0	11	0	0
	ENDOSULFAN I	11	0	0	10	0	0	11	0	0	11	0	0
	ENDOSULFAN II	11	0	0	10	0	0	11	0	0	11	0	0
	ENDRIN	11	0	0	10	0	0	11	0	0	11	0	0
	ENDOSULFAN SULPHATE	11	0	0	10	0	0	11	0	0	11	0	0
	HEPTACHLOR EPOXIDE	11	0	0	10	0	0	11	0	0	11	0	0
	HEPTACHLOR	11	0	0	10	0	0	11	0	0	11	0	0
	MIREX	11	0	0	10	0	0	11	0	0	11	0	0
	OXYCHLORDANE	11	0	0	10	0	0	11	0	0	11	0	0
	OPDDT	11	0	0	10	0	0	11	0	0	11	0	0
	PCB	11	0	0	10	0	0	11	0	0	11	0	0
	DDD	11	0	0	10	0	0	11	0	0	11	0	0
	PPDDE	11	0	0	10	0	0	11	0	0	11	0	0
	PPDDT	11	0	0	10	0	0	11	0	0	11	0	0
	AMETRINE	12	0	0	12	0	0	12	0	0	12	0	0
	ATRAZINE	12	0	2	12	0	1	12	0	0	12	0	0
	ATRATONE	12	0	0	12	0	0	12	0	0	12	0	0
	CYANAZINE	12	0	0	12	0	0	12	0	0	12	0	0
	DES ETHYL ATRAZINE	6	0	0	6	0	0	6	0	0	6	0	0
	DES ETHYL SIMAZINE	6	0	0	6	0	0	6	0	0	6	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON

SUMMARY TABLE OF RESULTS (1968)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
PESTICIDES & PCB	PROMETONE	12	0	0	12	0	0	12	0	0	12	0	0
	PROPAZINE	12	0	0	12	0	0	12	0	0	12	0	0
	PROMETRYNE	12	0	0	12	0	0	12	0	0	12	0	0
	METRIBUZIN	12	0	0	12	0	0	12	0	0	12	0	0
	SIMAZINE	12	0	0	12	0	0	12	0	0	12	0	0
	ALACHLOR	12	0	0	12	0	0	12	0	0	12	0	0
	METOLACHLOR	12	0	0	12	0	0	12	0	0	12	0	0
*TOTAL SCAN PESTICIDES & PCB		375	0	13	354	0	12	375	0	14	375	0	12
PHENOLICS	PHENOLICS	12	6	4	12	3	7	.	.	.	.	.	.
*TOTAL SCAN PHENOLICS		12	6	4	12	3	7	0	0	0	0	0	0
SPECIFIC PESTICIDES	TOXAPHENE	0	0	0	0	0	0	0	0	0	0	0	0
	2,4,5-T	1	0	0	1	0	0	.	.	.	.	.	.
	2,4-D	1	0	0	1	0	0	.	.	.	.	.	.
	2,4-DB	1	0	0	1	0	0	.	.	.	.	.	.
	2,4 D PROPIONIC ACID	1	0	0	1	0	0	.	.	.	.	.	.
	DICAMBA	1	0	0	1	0	0	.	.	.	.	.	.
	PICHLORAM	0	0	0	0	0	0	.	.	.	.	.	.
	SILVEX	1	0	0	1	0	0	.	.	.	.	.	.
	DIAZINON	1	0	0	1	0	0	.	.	.	.	.	.

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
SPECIFIC PESTICIDES	DICHLOROVOS	1	0	0	1	0	0	.	.	.	.	.	.
	CHLORPYRIFOS	1	0	0	1	0	0	.	.	.	.	.	.
	ETHION	1	0	0	1	0	0	.	.	.	.	.	.
	AZINPHOS-METHYL	0	0	0	0	0	0	.	.	.	.	.	.
	MALATHION	1	0	0	1	0	0	.	.	.	.	.	.
	MEVINPHOS	1	0	0	1	0	0	.	.	.	.	.	.
	METHYL PARATHION	1	0	0	1	0	0	.	.	.	.	.	.
	METHYLTRITHION	1	0	0	1	0	0	.	.	.	.	.	.
	PARATHION	1	0	0	1	0	0	.	.	.	.	.	.
	PHORATE	1	0	0	1	0	0	.	.	.	.	.	.
	RELDAN	1	0	0	1	0	0	.	.	.	.	.	.
	RONNEL	1	0	0	1	0	0	.	.	.	.	.	.
	AMINOCARB	0	0	0	0	0	0	.	.	.	.	.	.
	BENOMYL	1	0	0	1	0	0	.	.	.	.	.	.
	BUX	1	0	0	1	0	0	.	.	.	.	.	.
	CARBOFURAN	1	0	0	1	0	0	.	.	.	.	.	.
	CICP	1	0	0	1	0	0	.	.	.	.	.	.
	DIALLATE	1	0	0	1	0	0	.	.	.	.	.	.
	EPTAM	1	0	0	1	0	0	.	.	.	.	.	.
	IPC	1	0	0	1	0	0	.	.	.	.	.	.
	PROPOXUR	1	0	0	1	0	0	.	.	.	.	.	.
	CARBARYL	1	0	0	1	0	0	.	.	.	.	.	.
	BUTYLATE	1	0	0	1	0	0	.	.	.	.	.	.
*TOTAL SCAN SPECIFIC PESTICIDES		25	0	0	28	0	0	0	0	0	0	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
VOLATILES	BENZENE	10	0	0	10	0	0	9	0	0	10	0	0
	TOLUENE	10	1	0	10	0	2	9	0	4	10	1	3
	ETHYLBENZENE	10	0	1	10	0	5	9	0	7	10	0	6
	P-XYLENE	9	0	0	10	0	0	9	0	0	10	0	0
	M-XYLENE	10	0	1	10	0	0	9	0	2	10	0	0
	O-XYLENE	9	0	1	10	0	1	9	0	0	10	0	0
	STYRENE	4	0	0	4	0	3	4	0	4	4	0	4
	1,1 DICHLOROETHYLENE	10	0	0	10	0	0	9	0	0	10	0	0
	METHYLENE CHLORIDE	10	0	0	10	0	0	9	0	0	10	0	0
	T1,2DICHLOROETHYLENE	10	0	0	10	0	1	9	0	0	10	0	0
	1,1 DICHLOROETHANE	10	0	0	10	0	0	9	0	0	10	0	0
	CHLOROFORM	9	0	1	9	9	0	8	8	0	9	9	0
	111, TRICHLOROETHANE	10	0	0	10	0	0	9	0	0	10	0	0
	1,2 DICHLOROETHANE	10	0	0	10	0	0	9	0	0	10	0	0
	CARBON TETRACHLORIDE	10	0	0	10	0	0	9	0	0	10	0	0
	1,2 DICHLOROPROPANE	10	0	0	10	0	0	9	0	0	10	0	0
	TRICHLOROETHYLENE	10	0	0	10	0	0	9	0	0	10	0	0
	DICHLOROBROMOMETHANE	10	0	0	9	9	0	8	8	0	9	9	0
	112 TRICHLOROETHANE	10	0	0	10	0	0	9	0	0	10	0	0
	CHLORODIBROMOMETHANE	10	0	0	9	8	0	8	8	0	9	8	1
	T-CHLOROETHYLENE	10	0	0	10	1	0	9	0	0	10	0	0
	BROMOFORM	10	0	0	9	0	9	8	0	8	9	0	7
	1122 T-CHLOROETHANE	10	0	0	10	0	0	9	0	0	10	0	0
	CHLOROBENZENE	10	0	0	10	0	0	9	0	0	10	0	0
	1,4 DICHLOROBENZENE	10	0	0	10	0	0	9	0	0	10	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
VOLATILES	1,3 DICHLOROBENZENE	10	0	0	10	0	0	9	0	0	10	0	0
	1,2 DICHLOROBENZENE	10	0	0	10	0	0	9	0	0	10	0	0
	TRIFLUOROCHLOROTOLUE	3	0	0	3	0	0	2	0	0	3	0	0
	ETHLYENE DIBROMIDE	10	0	0	10	0	0	9	0	0	10	0	0
	TOTL TRIHALOMETHANES	10	0	0	9	9	0	8	8	0	9	9	0
*TOTAL SCAN VOLATILES		284	1	4	282	36	21	253	32	25	282	36	21
*TOTAL GROUP ORGANIC		1063	7	22	1026	39	40	782	32	39	811	36	34
TOTAL		1683	456	123	1665	464	160	1920	839	239	1898	784	228

KEY TO TABLE 5 and 6

A ONTARIO DRINKING WATER OBJECTIVES (ODWO)
1. Maximum Acceptable Concentration (MAC)
1+. MAC for Total Trihalomethanes
1*. MAC for Bacteriological Analyses
Poor water quality is indicated when :
- total coliform counts > 0 < 5
- P/A Bottle Test is present after 48 hours
- Aeromonas organisms are detected in more than 25% of samples in a single submission or in successive submissions from the same sampling site
- Pseudomonas Aeruginosa, Staphylococcus Aureus and members of the Fecal Streptococcus group should not be detected in any sample
- Standard Plate Count should not exceed 500 organisms per ml at 35 ^{0}C within 48 hours

2. Interim Maximum Acceptable Concentration (IMAC)
3. Maximum Desirable Concentration (MDC)
4. Aesthetic or Recommended Operational Guideline
- hardness levels between 80 and 100 mg/L as calcium carbonate are considered to provide an acceptable balance between corrosion and incrustation, water supplies with a hardness >200 mg/L are considered poor and those in excess of 500 mg/L are unacceptable.

B HEALTH & WELFARE CANADA (H&W)
1. Maximum Acceptable Concentration (MAC)
2. Proposed MAC
3. Interim MAC
4. Aesthetic Objective (AO) (for xylenes, the AO is a total)

C WORLD HEALTH ORGANIZATION (WHO)
1. Guideline Value (GV)
2. Tentative GV
3. Aesthetic GV

D US ENVIRONMENTAL PROTECTION AGENCY (EPA)
1. Maximum Contaminant Level (MCL)
2. Suggested No-Adverse Effect Level (SNAEL)
3. Lifetime Health Advisory
4. EPA Ambient Water Quality Criteria

F EUROPEAN ECONOMIC COMMUNITY (EEC)
1. Health Related Guideline Level
2. Aesthetic Guideline Level
3. Maximum Admissable Concentration (MADC)

G CALIFORNIA STATE DEPARTMENT OF HEALTH-GUIDELINE VALUE

H USSR MAXIMUM PERMISSIBLE CONCENTRATION

I NEW YORK STATE AMBIENT WATER GUIDELINE

N/A NONE AVAILABLE

LABORATORY RESULTS, REMARK DESCRIPTIONS

.	No Sample Taken
BDL	Below Minimum Measurable Amount
<T	Greater Than Detection Limit But Not Confident
>	Results Are Greater Than The Upper Limit
<=>	Approximate Result
!AW	No Data: Analysis Withdrawn
!CR	No Data: Could Not Confirm By Reanalysis
!CS	No Data: Contamination Suspected
!IL	No Data: Sample Incorrectly Labelled
!IS	No Data: Insufficient Sample
!LA	No Data: Laboratory Accident
!LD	No Data: Test Queued After Sample Discarded
!NA	No Data: No Authorization To Perform Reanalysis
!NP	No Data: No Procedure
!NR	No Data: Sample Not Received
!OP	No Data: Obscured Plate
!QU	No Data: Qulaity Control Unacceptable
!PE	No Data: Procedural Error - Sample Discarded
!PH	No Data: Sample pH Outside Valid Range
!RO	No Data: See Attached Report (no numeric results)
!SM	No Data: Sample Missing
!SS	No Data: Send Separate Sample Properly Preserved
!UI	No Data: Indeterminant Interference
!TX	No Data: Time Expired
A3C	Approximate, Total Count Exceeded 300 Colonies
APL	Additional Peak, Large, Not Priority Pollutant
APS	Additional Peak, Less Than, Not Priority Pollutant
CIC	Possible Contamination, Improper Cap
CRO	Calculated Result Only

PPS	Test Performed On Preserved Sample
RMP	P and M-Xylene Not Separated
RRV	Rerun Verification
RVU	Reported Value Unusual
SPS	Several Peaks, Small, Not Priority Pollutant
UAL	Unreliable: Sample Age Exceeds Normal Limit
UCR	Unreliable: Could Not Confirm By Reanalysis
UCS	Unreliable: Contamination Suspected
UIN	Unreliable: Indeterminant Interference
XP	Positive After X Number of Hours
T# (T06)	Result Taken After # Hours

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
BACTERIOLOGICAL						
FECAL COLIFORM MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = 0 (A1)	
JAN	0	.	.	.	.	.
FEB	0	.	.	.	.	.
MAR	1	.	.	.	.	.
APR	0	.	.	.	.	.
MAY	0	.	.	.	.	.
JUN	2	.	.	.	.	.
JUL	4	.	.	.	.	.
AUG	2	.	.	.	.	.
SEP	1 T24	.	.	.	.	.
OCT	2 T24	.	.	.	.	.
NOV	1 T24	.	.	.	.	.
DEC	0 T24	.	.	.	.	.
STANDRD PLATE CNT MF (CT/ML)			DET'N LIMIT = 0		GUIDELINE = 500/ML (A1)	
JAN	18	1	.	11	.	4
FEB	0	1	.	2	.	5
MAR	88	36	.	9	.	3
APR	6	2	.	1	.	4
MAY	96	0	.	1	.	4
JUN	1	2	.	1	.	7
JUL	340	36	.	14	.	34
AUG	900	2	.	5	.	9
SEP	.	22 T24	.	6 <<>	.	4 <<>
OCT	.	14 T24	.	0 <<>	.	29 T06
NOV	.	2 <<>	.	1 <<>	.	20 T06
DEC	.	14 T24	.	1 <<>	.	2 <<>
P/A BOTTLE ( )			DET'N LIMIT = 0		GUIDELINE = 0 (A1*)	
JAN	.	0	.	0	.	0
FEB	.	0	.	0	.	0
MAR	.	0	.	0	.	0
APR	.	0	.	0	.	0
MAY	.	0	.	0	.	0
JUN	.	0	.	0	.	0
JUL	.	0	.	0	.	0
AUG	.	0	.	0	.	0
TOTAL COLIFORM MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = 5/100ML(A1)	
JAN	12	0	.	0	.	0
FEB	6	0	.	0	.	0

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT				DISTRIBUTION SYSTEM	
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
MAR	26	0	.	0	.	0
APR	4	0	.	0	.	0
MAY	33	0	.	0	.	0
JUN	46	0	.	0	.	0
JUL	36 A3C	0	.	0	.	0
AUG	42 A3C	0	.	0	.	0
SEP	24 T24	0 T24	.	0 T06	.	0 T24
OCT	25 A3C	0 T24	.	0 T06	.	0 T06
NOV	26 A3C	0 T24	.	0 T24	.	0 T06
DEC	6 T24	0 T24	.	0 T06	.	0 T06
T COLIFORM BCKGRD MF (CT/100ML)		DET'N LIMIT = 0		GUIDELINE = N/A		
JAN	26	0	.	0	.	0
FEB	36	0	.	0	.	0
MAR	69	0	.	0	.	0
APR	44	0	.	0	.	0
MAY	107	0	.	0	.	0
JUN	560	0	.	0	.	0
JUL	1400	0	.	0	.	0
AUG	2200	6	.	0	.	0
SEP	186 T24	0 T24	.	0 T06	.	0 T24
OCT	360 A3C	0 T24	.	0 T06	.	0 T06
NOV	510 T24	0 T24	.	0 T24	.	0 T06
DEC	65 T24	0 T24	.	0 T06	.	0 T06

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT				DISTRIBUTION SYSTEM	
SITE	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
CHEMISTRY (FLD)						
FLD CHLORINE (COMB) (MG/L)			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.000	.000	.000	.000	.300	.500
FEB	.150	.980	.900	1.100	.	.700
MAR	.	1.050	1.100	1.300	.	1.100
APR	.	1.470	1.400	1.600	.	.400
MAY	.	1.430	1.300	1.500	.500	1.100
JUN	.	1.100	.500	.	.	.700
JUL	.	1.160	.	.	.300	.700
AUG	.	1.020	.100	.900	.	.300
SEP	.	1.360	1.400	1.500	.	.500
OCT	.	1.310	1.300	1.300	.	.700
NOV	.	1.220	1.100	1.300	.	.200
DEC	.	1.260	1.300	1.500	.	.700
FLD CHLORINE FREE (MG/L)			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.000	.000	.000	.000	.000	.000
FEB	.950	.	.	.	.	.
APR	.	.	.100	.100	.	.500
NOV	.	.	.	.	.	.300
FLD CHLORINE (TOTAL) (MG/L)			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.000	.850	1.100	1.100	.300	.500
FEB	1.100	.980	.900	1.100	.	.700
MAR	.	1.050	1.100	1.300	.	1.100
APR	.	1.470	1.500	1.700	.	.900
MAY	.	1.430	1.300	1.500	.500	1.100
JUN	.	1.100	.500	.	.	.700
JUL	.	1.160	.	.	.300	.700
AUG	.	1.020	.100	.900	.	.300
SEP	.	1.360	1.400	1.500	.	.500
OCT	.	1.310	1.300	1.300	.	.700
NOV	.	1.220	1.100	1.300	.	.500
DEC	.	1.260	1.300	1.500	.	.700
FLD PH (DIMENSLESS)			DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5(A4)	
JAN	7.750	7.600	7.800	7.800	7.400	7.600
FEB	7.650	7.400	7.800	7.800	7.400	7.600
MAR	7.300	7.450	7.600	7.600	7.600	7.600
APR	7.500	7.300	7.600	7.400	7.400	7.400
MAY	7.500	7.200	7.600	7.600	7.400	7.600
JUN	7.600	7.250	7.600	7.800	7.400	7.600

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
JUL	7.400	7.200	.	.	7.600	7.800
AUG	7.350	7.210	7.600	7.600	7.400	7.400
SEP	7.400	7.150	7.800	7.600	7.400	7.600
OCT	7.950	7.750	7.600	7.800	7.600	7.450
NOV	7.950	7.450	7.600	7.800	.	7.600
DEC	7.850	7.400	.	.	7.400	7.600
FLD TEMPERATURE (DEG.C)			DET'N LIMIT = N/A		GUIDELINE = 15 (A1)	
JAN	4.000	4.000	6.000	5.000	18.000	8.000
FEB	3.000	3.000	6.000	4.000	19.000	8.000
MAR	4.000	4.000	7.000	6.000	21.000	6.000
APR	5.000	5.000	9.000	8.000	20.000	10.000
MAY	11.000	11.000	13.000	12.000	18.000	11.000
JUN	12.000	12.000	15.000	14.000	21.000	15.000
JUL	17.000	17.000	21.000	21.000	23.000	18.000
AUG	17.000	17.000	22.000	20.000	23.000	18.000
SEP	13.000	13.000	18.000	16.000	22.000	17.000
OCT	10.000	10.000	14.000	13.000	20.000	14.000
NOV	8.000	8.000	10.000	9.000	19.000	11.000
DEC	6.000	6.000	7.000	6.000	19.000	9.000
FLD TURBIDITY (FTU)			DET'N LIMIT = N/A		GUIDELINE = 1.0 (A1)	
JAN	1.000	.220	.220	.160	.	.
FEB	1.200	.160	.	.	.	.
MAR	1.900	.170	.150	.150	.	.
APR	1.100	.150	.	.	.	.
MAY	2.900	.330	.	.	.	.
JUN	1.300	.450	.	.	.	.
JUL	1.300	.350	.	.	.	.
AUG	1.700	.330	.360	.330	.	.
SEP	1.200	.220	.220	.220	.	.
OCT	2.400	.230	.	.	.	.
NOV	1.000	.150	.	.	.	.
DEC	.900	.110	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
CHEMISTRY (LAB)						
ALKALINITY (MG/L)			DET'N LIMIT = .200		GUIDELINE = 30-500 (A4)	
JAN	99.100	92.900	93.800	93.400	94.900	95.700
FEB	98.800	89.200	95.300	96.800	98.000	96.700
MAR	100.600	95.400	98.700	95.500	97.100	95.800
APR	101.800	96.500	98.100	131.600	226.800	449.900
MAY	101.600	97.800	97.600	97.800	99.700	99.600
JUN	104.400	97.300	97.100	97.100	98.700	98.100
JUL	100.800	97.100	96.100	95.500	98.200	97.500
AUG	101.800	94.600	94.500	94.600	97.100	97.900
SEP	102.200	95.500	97.700	97.900	99.000	99.900
OCT	101.600	98.100	98.500	98.300	97.900	98.400
NOV	104.900	97.600	97.600	97.900	98.700	99.200
DEC	101.500	95.600	96.100	96.200	IAW	IAW
CALCIUM (MG/L)			DET'N LIMIT = .100		GUIDELINE = 100 (F2)	
JAN	40.400	40.400	39.000	40.600	38.600	39.800
FEB	38.800	40.800	40.600	40.600	40.000	39.800
MAR	40.000	41.000	40.200	40.200	40.400	39.800
APR	38.600	38.600	38.400	39.600	46.800	40.000
MAY	39.600	40.200	40.000	39.600	40.600	40.000
JUN	41.000	40.000	41.400	41.000	40.400	41.000
JUL	38.600	38.200	38.800	39.400	40.200	40.800
AUG	41.000	40.000	41.600	40.200	42.200	42.200
SEP	41.800	40.800	41.000	41.200	43.000	41.000
OCT	43.000	43.400	43.800	43.400	44.800	42.600
NOV	40.000	41.000	40.400	41.200	40.400	41.000
DEC	41.200	41.800	41.000	41.600	IAW	IAW
CHLORIDE (MG/L)			DET'N LIMIT = .200		GUIDELINE = 250 (A3)	
JAN	23.200	24.400	24.600	24.500	24.900	24.800
FEB	23.400	25.900	25.500	25.500	25.900	25.600
MAR	24.800	26.700	26.700	26.600	27.000	26.900
APR	23.200	24.700	26.100	25.900	27.100	28.200
MAY	24.900	27.400	27.500	27.400	27.900	27.700
JUN	26.400	29.400	29.800	29.400	27.900	28.000
JUL	23.800	26.100	26.600	26.600	26.600	26.700
AUG	22.900	25.800	27.300	26.000	26.600	26.200
SEP	23.700	25.300	26.400	26.400	26.200	26.100
OCT	23.000	25.100	25.600	25.400	26.200	25.900
NOV	23.200	25.600	25.400	25.400	25.500	25.600
DEC	22.500	24.400	24.500	23.400	IAW	IAW

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT				DISTRIBUTION SYSTEM	
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
COLOUR (HZU)			DET'N LIMIT = .5		GUIDELINE = 5.0 (A3)	
JAN	1.500 <T	1.500 <T	1.500 <T	1.500 <T	BDL	.500 <T
FEB	1.500 <T	1.000 <T	1.500 <T	1.500 <T	.500 <T	1.000 <T
MAR	1.500 <T	2.000 <T	2.000 <T	1.500 <T	.500 <T	1.000 <T
APR	2.000 <T	1.000 <T	1.000 <T	1.000 <T	.500 <T	.500 <T
MAY	4.000	1.000 <T	1.500 <T	1.500 <T	1.000 <T	1.000 <T
JUN	2.500	.500 <T	1.000 <T	1.000 <T	1.000 <T	1.000 <T
JUL	2.000	.500	1.500	1.500	1.000	1.000
AUG	2.500	1.000 <T	1.500 <T	1.500 <T	1.000 <T	1.000 <T
SEP	10.000	7.500	7.000	5.500	4.000	.500 <T
OCT	2.000 <T	1.000 <T	1.500 <T	1.000 <T	1.000 <T	2.000 <T
NOV	1.500 <T	1.000 <T	1.500 <T	.500 <T	.500 <T	1.500 <T
DEC	1.500 <T	.500 <T	1.000 <T	1.000 <T	IAM	IAM
CONDUCTIVITY (UMHO/CM)			DET'N LIMIT = 1		GUIDELINE = 400 (F2)	
JAN	327	325	328	325	331	334
FEB	323	319	329	332	337	333
MAR	328	333	335	334	340	336
APR	327	337	342	335	356	351
MAY	338	345	372	344	350	349
JUN	353	359	358	357	351	351
JUL	337	341	340	337	344	344
AUG	331	337	344	338	343	343
SEP	335	339	339	340	342	344
OCT	329	334	335	334	338	338
NOV	353	341	336	337	342	343
DEC	327	331	331	331	IAM	IAM
FLUORIDE (MG/L)			DET'N LIMIT = .01		GUIDELINE = 2.400 (A1)	
JAN	.100	.800	.880	.900	.940	.900
FEB	.140	.910	.860	.850	.910	.910
MAR	.130	.760	.890	.890	.890	.870
APR	.120	.920	.940	.930	.970	.920
MAY	.130	.930	1.020	1.020	.940	.930
JUN	.160	.900	.930	.930	.960	.900
JUL	.130	.130	.140	.140	.430	.400
AUG	.120	.860	1.000	.940	.960	.940
SEP	.140	.140	.140	.140	.140	.140
OCT	.120	.120	.140	.140	.140	.140
NOV	.120	1.160	1.080	1.080	1.060	1.040
DEC	.140	1.020	1.180	1.180	IAM	IAM
HARDNESS (MG/L)			DET'N LIMIT = .500		GUIDELINE = 80-100 (A4)	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
JAN	136.000	137.000	132.000	136.000	130.000	134.000
FEB	130.000	136.000	135.000	135.000	140.000	136.000
MAR	133.000	137.000	134.000	134.000	135.000	134.000
APR	131.000	130.000	130.000	133.000	150.000	134.000
MAY	133.000	135.000	134.000	133.000	135.000	135.000
JUN	139.000	136.000	139.000	138.000	136.000	138.000
JUL	131.000	129.000	131.000	132.000	135.000	136.000
AUG	137.000	134.000	139.000	135.000	139.000	140.000
SEP	141.000	139.000	139.000	139.000	144.000	139.000
OCT	142.000	143.000	144.000	142.000	145.000	142.000
NOV	135.000	137.000	135.000	138.000	136.000	137.000
DEC	136.000	137.000	135.000	136.000	IAW	IAW
IONCAL (DMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
FEB	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
MAR	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
APR	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
MAY	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
JUN	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
JUL	2.127	4.361	2.513	.909	1.109	.278
AUG	.812	.882	1.677	.001	.564	1.117
SEP	1.204	.332	.649	.001	1.513	2.387
OCT	2.679	1.421	3.165	1.772	2.877	.913
NOV	4.780	2.229	2.019	.923	3.156	3.105
DEC	2.074	.365	2.360	.725	.000 NAF	.000 NAF
LANGELIERS INDEX (DMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.298 NAF	.121 NAF	.129 NAF	.145 NAF	.109 NAF	.146 NAF
FEB	.290 NAF	.228 NAF	.193 NAF	.260 NAF	.208 NAF	.251 NAF
MAR	.421 NAF	.118 NAF	.114 NAF	.100 NAF	.118 NAF	.106 NAF
APR	.470 NAF	.406 NAF	.431 NAF	.502 NAF	.819 NAF	1.039 NAF
MAY	.580 NAF	.289 NAF	.263 NAF	.332 NAF	.321 NAF	.334 NAF
JUN	.525 NAF	.303 NAF	.307 NAF	.303 NAF	.484 NAF	.338 NAF
JUL	.455	.414	.386	.391	.411	.434
AUG	.486	.303	.299	.295	.337	.351
SEP	.456	.196	.328	.300	.304	.337
OCT	.446	.355	.420	.345	.407	.307
NOV	.426	.367	.351	.361	.345	.374
DEC	.397	.127	.191	.218	.	.
MAGNESIUM (MG/L)			DET'N LIMIT = .050		GUIDELINE = 30 (F2)	
JAN	8.500	8.800	8.500	8.500	8.200	8.300

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WBS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	8.200	8.200	8.200	8.100	9.800	8.900
MAR	7.900	8.300	8.300	8.100	8.300	8.500
APR	8.500	8.200	8.200	8.200	8.100	8.200
MAY	8.300	8.400	8.300	8.300	8.300	8.500
JUN	8.700	8.700	8.700	8.600	8.600	8.600
JUL	8.500	8.000	8.200	8.200	8.400	8.200
AUG	8.400	8.400	8.500	8.400	8.300	8.300
SEP	8.900	8.900	8.800	8.900	8.900	8.800
OCT	8.500	8.400	8.500	8.100	8.100	8.800
NOV	8.600	8.500	8.400	8.500	8.500	8.400
DEC	8.000	7.900	8.000	7.900	IAW	IAW
SODIUM (MG/L)			DET'N LIMIT = .200		GUIDELINE = 200 (C3)	
JAN	12.000	12.000	11.600	12.000	12.400	12.200
FEB	11.800	12.200	12.200	12.200	12.600	12.800
MAR	13.200	13.600	13.400	13.600	13.400	13.600
APR	12.400	12.200	12.200	12.000	13.800	13.600
MAY	12.800	13.200	13.400	12.800	13.200	12.800
JUN	13.600	13.800	13.600	13.600	13.000	12.600
JUL	13.000	12.800	12.800	12.800	12.800	12.800
AUG	12.600	12.200	13.000	12.400	12.400	12.600
SEP	12.600	12.400	12.400	12.600	12.400	12.200
OCT	12.000	11.400	12.200	12.200	12.400	12.000
NOV	11.400	11.200	11.400	11.200	11.800	11.400
DEC	12.200	12.000	11.600	11.800	IAW	IAW
AMMONIUM TOTAL (MG/L)			DET'N LIMIT = 0.002		GUIDELINE = .05 (F2)	
JAN	.016	.094	.108	.110	.130	.114
FEB	.002 <T	.136	.152	.154	.148	.128
MAR	.008 <T	.176	.174	.178	.186	.156
APR	.006 <T	.204	.230	.232	.206	.152
MAY	.022	.164	.166	.170	.206	.214
JUN	.074	.086	.104	.108	.122	.120
JUL	.040	.196	.190	.192	.172	.164
AUG	.038	.080	.114	.086	BDL	.096
SEP	.034	.078	.134	.142	.018	.040
OCT	.014	.178	.168	.170	.044	.142
NOV	.018	.196	.186	.196	.056	.130
DEC	.016	.206	.212	.214	IAW	IAW
NITRITE (MG/L)			DET'N LIMIT = 0.001		GUIDELINE = 1.000 (A1)	
JAN	.002 <T	.002 <T	.004 <T	.003 <T	.007	.003 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE						
	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	.001 <T	.001 <T	.002 <T	.002 <T	.007	.004 <T
MAR	.058	.002 <T	.005	.005	.007	.004 <T
APR	.002 <T	.001 <T	.002 <T	.001 <T	.007	.002 <T
MAY	.005	.002 <T	.002 <T	.002 <T	.007	.004 <T
JUN	.028	.001 <T	.003 <T	.003 <T	.008	.004 <T
JUL	.073	.004 <T	.010	.007	.007	.007
AUG	.031	.003 <T	.010	.004 <T	.137	.065
SEP	.010	.005	.006	.005	.125	.091
OCT	.007	.004 <T	.006	.003 <T	.117	.026
NOV	.003 <T	.002 <T	.003 <T	.002 <T	.100	.013
DEC	.002 <T	.001 <T	.002 <T	.002 <T	IAW	IAW
TOTAL NITRATES (MG/L)			DET'N LIMIT = .020		GUIDELINE = 10.000 (A1)	
JAN	.350	.360	.370	.375	.380	.390
FEB	.365	.395	.390	.385	.405	.390
MAR	.455	.415	.430	.425	.430	.445
APR	.355	.370	.375	.375	.430	.425
MAY	.365	.380	.385	.380	.400	.400
JUN	.460	.460	.475	.475	.415	.425
JUL	.345	.265	.285	.280	.305	.320
AUG	.260	.265	.340	.280	.430	.355
SEP	.405	.415	.420	.420	.490	.510
OCT	.395	.365	.395	.375	.500	.430
NOV	.400	.430	.420	.410	.530	.465
DEC	.415	.415	.415	.415	IAW	IAW
NITROGEN TOT KJELD (MG/L)			DET'N LIMIT = .020		GUIDELINE = N/A	
JAN	.350	.220	.420	.620	.290	.260
FEB	.150	.270	.270	.270	.300	.290
MAR	.200	.320	.360	.350	.360	.340
APR	.200	.320	.390	.360	.380	.310
MAY	.300	.360	.380	.380	.430	.430
JUN	.360	.300	.340	.330	.370	.340
JUL	.260	.420	.410	.410	.430	.380
AUG	.210	.280	.310	.300	.210	.210
SEP	.280	.250	.310	.330	.190	.240
OCT	.210	.320	.330	.320	.230	.310
NOV	.180	.290	.300	.310	.240	.280
DEC	.240	.330	.330	.320	IAW	IAW
PH (DIMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5(A4)	
JAN	8.140	7.990	8.010	8.010	7.990	8.010

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	8.150	8.110	8.050	8.110	8.060	8.110
MAR	8.260	7.970	7.960	7.960	7.970	7.970
APR	8.320	8.280	8.300	8.230	8.240	8.230
MAY	8.420	8.140	8.120	8.190	8.160	8.180
JUN	8.340	8.160	8.150	8.150	8.330	8.180
JUL	8.310	8.290	8.260	8.260	8.260	8.280
AUG	8.310	8.170	8.150	8.160	8.170	8.180
SEP	8.270	8.050	8.170	8.140	8.120	8.170
OCT	8.250	8.170	8.230	8.160	8.210	8.130
NOV	8.250	8.210	8.200	8.200	8.190	8.210
DEC	8.220	7.970	8.040	8.060	IAW	IAW
PHOSPHORUS FIL REACT (MG/L)			DET'N LIMIT = .0005		GUIDELINE = N/A	
JAN	.001 <T	.002 <T	.	.	.	.
FEB	.002	.006	.	.	.	.
MAR	.003	.002	.	.	.	.
APR	.000 <T	.000 <T	.	.	.	.
MAY	.001 <T	.001 <T	.	.	.	.
JUN	.003	.002	.	.	.	.
JUL	.002	.004	.	.	.	.
AUG	.004	.001 <T	.	.	.	.
SEP	.002 <T	.002 <T	.	.	.	.
OCT	.002 <T	.001 <T	.	.	.	.
NOV	.001 <T	.001 <T	.	.	.	.
DEC	BDL	BDL	.	.	.	.
PHOSPHORUS TOTAL (MG/L)			DET'N LIMIT = .002		GUIDELINE = .40 (F2)	
JAN	.117	.017	.	.	.	.
FEB	.008 <T	.011	.	.	.	.
MAR	.011	BDL	.	.	.	.
APR	.009 <T	.003 <T	.	.	.	.
MAY	.014	.008 <T	.	.	.	.
JUN	.014	.007 <T	.	.	.	.
JUL	.014	.007 <T	.	.	.	.
AUG	.009 <T	.002 <T	.	.	.	.
SEP	.013	.006 <T	.	.	.	.
OCT	.010	.002 <T	.	.	.	.
NOV	.006 <T	BDL	.	.	.	.
DEC	.007 <T	BDL	.	.	.	.
SULPHATE ( )			DET'N LIMIT = .200		GUIDELINE = 500. (A3)	
JUL	26.400	27.600	27.300	26.900	27.200	27.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT				DISTRIBUTION SYSTEM	
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
AUG	26.930	29.470	29.280	28.700	28.180	28.080
SEP	28.200	30.900	29.400	29.500	29.500	29.400
OCT	27.440	29.900	28.930	29.170	29.570	29.900
NOV	27.520	29.500	28.000	28.000	29.000	29.000
DEC	29.740	31.480	31.600	29.680	IAW	IAW
TURBIDITY (FTU)			DET'N LIMIT = .02		GUIDELINE = 1.00 (A1)	
JAN	.720	.140	.090 <T	.070 <T	.080 <T	.060 <T
FEB	.450	.150	.130	.120	.150	.090 <T
MAR	.910	.060 <T	.130	.140	.190	.150
APR	.490	.100	.180	.130	.130	.170
MAY	.340	.120	.290	.270	.220	.200
JUN	1.550	.180	.210	.260	.240	.310
JUL	1.400	.740	.690	.480	.730	.790
AUG	1.640	.390	.320	.450	.280	.280
SEP	.880	.470	.270	.330	.250 <T	.270
OCT	1.700	.550	.680	.790	.180 <T	.240 <T
NOV	1.070	.940	.840	.600	.600	.620
DEC	.970	.280	.220 <T	.250 <T	IAW	IAW

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
METALS						
SILVER (UG/L)			DET'N LIMIT = .020		GUIDELINE = 50. (A1)	
JAN	BDL	.020 <T	.030 <T	.020 <T	.100 <T	.050 <T
FEB	.030 <T	.040 <T	.020 <T	.020 <T	.030 <T	.100 <T
MAR	.020	.100	.040	.050	.020	.030
APR	.080 <T	.180 <T	.100 <T	.080 <T	.090 <T	.060 <T
MAY	BDL	BDL	BDL	BDL	BDL	BDL
JUN	BDL	BDL	BDL	BDL	BDL	BDL
JUL	BDL	BDL	BDL	BDL	BDL	BDL
AUG	.080 <T	.070 <T	.030 <T	BDL	BDL	BDL
SEP	BDL	.060 <T	.040 <T	.050 <T	.040 <T	BDL
OCT	BDL	.190 <T	.070 <T	.170 <T	.070 <T	.030 <T
NOV	BDL	.060 <T	.070 <T	.070 <T	.050 <T	.040 <T
DEC	.060 <T	.070 <T	.050 <T	.040 <T	BDL	.060 <T
ALUMINUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = 100.(A4)	
JAN	13.920	87.000	71.920	70.760	83.520	66.120
FEB	8.468	26.680	38.280	38.280	61.480	46.400
MAR	11.600	77.720	78.880	71.920	75.400	59.160
APR	9.512	78.880	77.720	67.280	103.240	84.680
MAY	8.120	197.200	150.800	150.800	116.000	116.000
JUN	13.920	127.600	100.920	98.600	105.560	112.520
JUL	18.560	162.400	174.000	185.600	139.200	150.800
AUG	12.760	208.800	139.200	150.800	116.000	113.680
SEP	4.756	87.000	81.200	83.520	82.360	77.720
OCT	18.560	78.880	70.760	69.600	92.800	76.560
NOV	6.264	84.680	67.280	67.280	73.080	66.120
DEC	10.324	70.760	58.000	53.360	68.440	.
DEC	.	.	.	.	.	54.520
ARSENIC (UG/L)			DET'N LIMIT = 0.050		GUIDELINE = 50.0 (A1)	
JAN	1.200	.940 <T	1.200	1.200	.970 <T	1.100
FEB	1.100	1.200	1.100	1.100	.980 <T	.970 <T
MAR	.640	.720	.700	.880	.650	.720
APR	.940 <T	.540 <T	.370 <T	.640 <T	.490 <T	.450 <T
MAY	.940 <T	.870 <T	1.100	1.200	.920 <T	.960 <T
JUN	1.500	1.300	1.300	1.400	1.300	1.400
JUL	.980 <T	.340 <T	.510 <T	.640 <T	.540 <T	.380 <T
AUG	1.200	1.300	1.200	1.200	1.200	1.300
SEP	1.100	.910 <T	1.100	1.000 <T	.880 <T	.960 <T
OCT	1.100	.700 <T	.660 <T	.660 <T	.610 <T	.670 <T
NOV	.870 <T	.820 <T	.740 <T	.950 <T	.750 <T	.900 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	1.300	1.100	1.200	.350 <T	.890 <T	.420 <T
BARIUM (UG/L)			DET'N LIMIT = 0.020		GUIDELINE = 1000. (A1)	
JAN	23.000	22.000	22.000	22.000	23.000	23.000
FEB	21.000	21.000	20.000	21.000	21.000	20.000
MAR	21.000	20.000	19.000	20.000	20.000	19.000
APR	24.000	22.000	23.000	23.000	23.000	24.000
MAY	22.000	22.000	21.000	21.000	21.000	21.000
JUN	28.000	25.000	26.000	24.000	26.000	24.000
JUL	23.000	22.000	22.000	22.000	22.000	24.000
AUG	23.000	23.000	25.000	23.000	24.000	24.000
SEP	23.000	23.000	23.000	24.000	23.000	23.000
OCT	24.000	21.000	23.000	23.000	24.000	24.000
NOV	23.000	23.000	22.000	23.000	24.000	23.000
DEC	24.000	23.000	23.000	22.000	23.000	22.000
BORON (UG/L)			DET'N LIMIT = 0.200		GUIDELINE = 5000. (A1)	
JAN	26.000	25.000	26.000	26.000	25.000	25.000
FEB	25.000	25.000	23.000	23.000	24.000	24.000
MAR	25.000	23.000	27.000	34.000	20.000	23.000
APR	39.000	23.000	23.000	23.000	27.000	26.000
MAY	31.000	25.000	26.000	37.000	24.000	26.000
JUN	29.000	24.000	26.000	26.000	26.000	26.000
JUL	26.000	24.000	25.000	25.000	23.000	27.000
AUG	25.000	26.000	27.000	25.000	26.000	27.000
SEP	30.000	62.000	59.000	56.000	28.000	25.000
OCT	48.000	34.000	25.000	42.000	30.000	38.000
NOV	33.000	58.000	57.000	65.000	54.000	58.000
DEC	24.000	52.000	45.000	42.000	27.000	14.000 <T
BERYLLIUM (UG/L)			DET'N LIMIT = 0.010		GUIDELINE = .20 (N)	
JAN	BDL	.010 <T	BDL	BDL	BDL	BDL
FEB	.010 <T	.010 <T	BDL	.030 <T	BDL	.010 <T
MAR	.010	.040	.010	.060	.010	.010
APR	.120 <T	BDL	BDL	BDL	.020 <T	.070 <T
MAY	BDL	BDL	BDL	.020 <T	BDL	BDL
JUN	.020 <T	BDL	BDL	BDL	BDL	BDL
JUL	BDL	BDL	BDL	BDL	BDL	BDL
AUG	BDL	BDL	BDL	BDL	BDL	BDL
SEP	BDL	.080 <T	.050 <T	BDL	.020 <T	BDL
OCT	.040 <T	.020 <T	BDL	.110 <T	.080 <T	.060 <T
NOV	.020 <T	.040 <T	.060 <T	.080 <T	.040 <T	.120 <T

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DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	.070 <T	.160 <T	.030 <T	BDL	.030 <T	.070 <T
CADMIUM (UG/L)			DET'N LIMIT = 0.050		GUIDELINE = 5.000 (A1)	
JAN	BDL	BDL	BDL	BDL	.070 <T	.090 <T
FEB	BDL	BDL	BDL	BDL	BDL	BDL
MAR	.050	.060	.050	.050	.050	.050
APR	BDL	BDL	BDL	BDL	BDL	BDL
MAY	BDL	BDL	BDL	BDL	BDL	BDL
JUN	BDL	BDL	.060 <T	BDL	BDL	.080 <T
JUL	BDL	BDL	BDL	BDL	BDL	BDL
AUG	BDL	BDL	.070 <T	BDL	BDL	BDL
SEP	BDL	.070 <T	BDL	BDL	BDL	BDL
OCT	BDL	BDL	BDL	.060 <T	BDL	BDL
NOV	BDL	BDL	BDL	BDL	.070 <T	BDL
DEC	BDL	BDL	BDL	.060 <T	BDL	BDL
COBALT (UG/L)			DET'N LIMIT = 0.020		GUIDELINE = 1000 (N)	
JAN	.110 <T	.070 <T	.140 <T	.080 <T	.110 <T	.110 <T
FEB	.080 <T	.050 <T	.030 <T	.050 <T	.050 <T	.060 <T
MAR	.030	.040	.020	.060	.050	.070
APR	.080 <T	.070 <T	.060 <T	.040 <T	.050 <T	.070 <T
MAY	.040 <T	BDL	.050 <T	.050 <T	BDL	.040 <T
JUN	BDL	BDL	BDL	BDL	BDL	BDL
JUL	.220 <T	.230 <T	.250 <T	.220 <T	.200 <T	.180 <T
AUG	.170 <T	.110 <T	.110 <T	.140 <T	.120 <T	.240 <T
SEP	.130 <T	.100 <T	.130 <T	.090 <T	.250 <T	.090 <T
OCT	.070 <T	.070 <T	BDL	.090 <T	BDL	BDL
NOV	.100 <T	.110 <T	.060 <T	.130 <T	.050 <T	.140 <T
DEC	.170 <T	.140 <T	.200 <T	.110 <T	.050 <T	.100 <T
CHROMIUM (UG/L)			DET'N LIMIT = 0.100		GUIDELINE = 50. (A1)	
JAN	.560 <T	.560 <T	.520 <T	.510 <T	.530 <T	.560 <T
FEB	.370 <T	470.000	.900 <T	.520 <T	.510 <T	.420 <T
MAR	12.000	4.800	.690	4.000	.650	1.100
APR	30.000	2.300	.610 <T	.630 <T	.880 <T	.900 <T
MAY	3.200	2.000	.700 <T	4.100	.730 <T	.950 <T
JUN	.210 <T	.440 <T	.330 <T	.390 <T	.390 <T	.530 <T
JUL	.470 <T	.620 <T	.540 <T	.480 <T	.540 <T	.510 <T
AUG	.430 <T	.640 <T	.450 <T	.380 <T	.420 <T	.410 <T
SEP	.830 <T	4.700	4.700	4.000	.950 <T	.390 <T
OCT	5.100	2.500	.560 <T	2.900	.620 <T	1.700
NOV	1.000 <T	190.000 RRV	9.370	4.500	3.200	4.500

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE						
	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	12.000	11.000	3.100	2.100	.750 <T	.900 <T
COPPER (UG/L)			DET'N LIMIT = .100		GUIDELINE = 1000 (A3)	
JAN	1.800	1.100	2.700	2.100	320.000	21.000
FEB	1.400	1.100	2.800	2.000	280.000	30.000
MAR	1.300	.940	2.500	2.300	330.000	23.000
APR	1.900	1.200	5.200	2.500	290.000	23.000
MAY	1.500	1.200	2.600	2.500	57.000	21.000
JUN	2.100	1.500	3.300	2.500	64.000	22.000
JUL	2.300	1.400	3.400	2.200	68.000	16.000
AUG	1.700	1.200	16.000	3.000	72.000	19.000
SEP	1.800	1.500	4.900	3.700	97.000	15.000
OCT	1.300	1.100	3.600	2.400	72.000	22.000
NOV	1.800	1.300	4.530	2.700	100.000	20.000
DEC	1.600	1.100	4.600	3.100	180.000	21.000
IRON (UG/L)			DET'N LIMIT = 4.000		GUIDELINE = 300. (A3)	
JAN	31.000 <T	24.000 <T	51.000	47.000	4.800 <T	11.000 <T
FEB	15.000 <T	25.000 <T	35.000 <T	37.000 <T	BDL	BDL
MAR	31.000	15.000	46.000	40.000	7.100	7.600
APR	31.000 <T	15.000 <T	53.000	31.000 <T	17.000 <T	19.000 <T
MAY	21.000 <T	8.800 <T	47.000 <T	46.000 <T	9.400 <T	10.000 <T
JUN	28.000 <T	BDL	10.000 <T	16.000 <T	BDL	BDL
JUL	40.000 <T	13.000 <T	38.000 <T	37.000 <T	8.000 <T	11.000 <T
AUG	26.000 <T	8.300 <T	42.000 <T	48.000 <T	8.300 <T	9.800 <T
SEP	17.000 <T	16.000 <T	37.000 <T	31.000 <T	BDL	BDL
OCT	47.000 <T	7.700 <T	27.000 <T	26.000 <T	10.000 <T	14.000 <T
NOV	7.200 <T	BDL	32.910 <T	30.000 <T	BDL	7.300 <T
DEC	28.000 <T	25.000 <T	53.000	41.000 <T	25.000 <T	9.800 <T
MERCURY (UG/L)			DET'N LIMIT = 0.010		GUIDELINE = 1.000 (A1)	
JAN	.010	.010	.	.010	.	.010
FEB	.050	.060	.	BDL	.	BDL
MAR	.090	.080	.	.020	.	BDL
APR	.070	.090	.	.020	.	BDL
MAY	BDL	.070	.	.020 <T	.	BDL
JUN	BDL	BDL	.	.040 <T	.	.020 <T
JUL	BDL	BDL	.	.060	.	.030 <T
AUG	BDL	BDL	.	BDL	.	.030 <T
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	.020 <T	.	.030 <T	.	.020 <T
NOV	.020 <T	.020 <T	.	.040 <T	.	.050 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	.020 <T	.030 <T	.	.020 <T	.	.030 <T
MANGANESE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 50.0 (A3)	
JAN	2.000	1.400	2.200	2.000	.860	.650
FEB	1.800	1.700	1.700	1.800	.770	.560
MAR	2.500	.740	1.900	1.800	.890	.630
APR	2.200	.620	2.000	1.800	1.300	.920
MAY	3.100	.810	3.200	3.200	1.100	1.200
JUN	7.100	1.400	2.300	2.300	1.800	1.800
JUL	8.600	2.900	4.000	4.000	3.300	2.700
AUG	5.300	.630	2.400	3.400	1.200	1.100
SEP	2.600	.920	3.000	2.600	1.000	.650
OCT	4.300	.670	1.900	1.900	1.300	.660
NOV	2.400	.580	2.190	2.200	.720	.760
DEC	3.600	.830	1.600	1.500	1.200	.580
MOLYBDENUM (UG/L)			DET'N LIMIT = 0.020		GUIDELINE = 500 (H)	
JAN	1.300	1.300	1.300	1.200	1.200	1.300
FEB	1.100	1.100	1.100	1.100	1.100	1.100
MAR	1.100	1.200	1.100	1.200	1.200	1.200
APR	1.200	1.200	1.200	1.300	1.200	1.200
MAY	1.200	1.200	1.200	1.300	1.100	1.200
JUN	1.600	1.600	1.600	1.500	1.400	1.500
JUL	1.200	1.200	1.100	1.300	1.300	1.200
AUG	1.200	1.200	1.400	1.200	1.300	1.200
SEP	1.200	1.300	1.200	1.300	1.100	1.200
OCT	1.200	1.300	1.300	1.200	1.200	1.200
NOV	1.200	1.300	1.200	1.300	1.300	1.200
DEC	1.300	1.300	1.300	1.000	1.200	1.300
NICKEL (UG/L)			DET'N LIMIT = 0.100		GUIDELINE = 50. (F3)	
JAN	1.100 <T	.810 <T	.750 <T	.100 <T	.480 <T	.840 <T
FEB	.830 <T	1.100 <T	.230 <T	.640 <T	.490 <T	.440 <T
MAR	.730	1.000	.100	2.300	1.900	1.200
APR	1.900	1.100 <T	.900 <T	.620 <T	1.100 <T	.870 <T
MAY	1.500 <T	.520 <T	.820 <T	.750 <T	.510 <T	.730 <T
JUN	1.800 <T	1.600 <T	1.200 <T	1.200 <T	.970 <T	1.300 <T
JUL	1.500 <T	1.500 <T	1.300 <T	.990 <T	1.100 <T	.780 <T
AUG	2.700	1.300 <T	4.300	1.300 <T	1.300 <T	1.200 <T
SEP	1.300 <T	BDL	.390 <T	.230 <T	.450 <T	BDL
OCT	.450 <T	.640 <T	BDL	.570 <T	.110 <T	BDL
NOV	BDL	BDL	.120 <T	.140 <T	BDL	.360 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT				DISTRIBUTION SYSTEM	
SITE	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	2.000 <T	1.200 <T	1.100 <T	BDL	BDL	BDL
LEAD (UG/L)			DET'N LIMIT = 0.050		GUIDELINE = 50. (A1)	
JAN	.310	.180 <T	1.100	.620	6.600	.380
FEB	.280	.210	.730	.540	5.300	.620
MAR	.380	.150	.800	.480	4.900	.330
APR	.290	.130 <T	1.300	.630	4.700	.490
MAY	.330	.170 <T	1.100	.710	1.500	.430
JUN	.620	.230	1.200	.880	3.200	.610
JUL	.350	.390	1.500	1.200	6.100	.790
AUG	.570	.560	5.700	2.400	7.000	.810
SEP	.460	.290	1.600	1.500	3.300	.550
OCT	.510	.130 <T	1.100	1.200	2.700	.600
NOV	.280	.290	1.040	1.000	3.600	.450
DEC	.310	.090 <T	.890	.910	3.300	.450
ANTIMONY (UG/L)			DET'N LIMIT = .050		GUIDELINE = 146. (D4)	
JAN	.240	.190 <T	.250	.210	.310	.250
FEB	.240	.240	.220	.250	.260	.240
MAR	.240	.320	.260	.240	.310	.270
APR	.290	.280	.300	.270	.330	.290
MAY	.240	.300	.220	.200 <T	.260	.230
JUN	.300	.360	.380	.320	.270	.260
JUL	.200 <T	.220	.240	.220	.260	.240
AUG	.280	.260	.880	.270	.630	.200 <T
SEP	.710	.670	.720	.750	.970	.630
OCT	.260	.250	.250	.270	.280	.250
NOV	.370	.470	.650	.530	.490	.520
DEC	.410	.350	.400	.470	.500	.250
SELENIUM (UG/L)			DET'N LIMIT = 0.200		GUIDELINE = 10. (A1)	
JAN	.840 <T	1.500 <T	1.300 <T	1.800 <T	1.700 <T	1.700 <T
FEB	.720 <T	1.500 <T	1.200 <T	1.300 <T	1.000 <T	1.800 <T
MAR	1.300	1.800	1.400	1.800	2.200	2.400
APR	.860 <T	1.400 <T	1.800 <T	1.700 <T	1.500 <T	2.900 <T
MAY	1.300 <T	1.700 <T	1.300 <T	1.500 <T	1.600 <T	1.700 <T
JUN	1.600 <T	3.200 <T	1.600 <T	2.100 <T	2.700 <T	2.400 <T
JUL	BDL	1.500 <T	1.500 <T	BDL	BDL	BDL
AUG	.520 <T	2.100 <T	1.400 <T	2.300 <T	.840 <T	BDL
SEP	1.300 <T	1.400 <T	3.500 <T	2.100 <T	3.000 <T	2.300 <T
OCT	.970 <T	2.700 <T	1.700 <T	3.100 <T	1.200 <T	2.300 <T
NOV	2.500 <T	3.300 <T	3.630 <T	4.000 <T	4.700 <T	3.700 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	BDL	1.700 <T	2.600 <T	1.300 <T	2.400 <T	1.600 <T
STRONTIUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = 2000.(H)	
JAN	200.000	200.000	200.000	200.000	200.000	200.000
FEB	170.000	180.000	170.000	170.000	170.000	170.000
MAR	180.000	170.000	160.000	180.000	170.000	170.000
APR	200.000	190.000	200.000	190.000	190.000	190.000
MAY	180.000	180.000	180.000	200.000	190.000	190.000
JUN	190.000	190.000	190.000	190.000	180.000	180.000
JUL	180.000	180.000	180.000	180.000	190.000	180.000
AUG	180.000	180.000	180.000	180.000	170.000	170.000
SEP	200.000	200.000	200.000	200.000	200.000	200.000
OCT	180.000	190.000	180.000	180.000	170.000	170.000
NOV	180.000	180.000	177.000	180.000	180.000	180.000
DEC	180.000	180.000	180.000	170.000	180.000	180.000
TITANIUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = N/A	
JAN	4.600	4.800	4.600	4.400	4.600	4.800
FEB	4.100	4.300	4.400	4.200	4.800	4.000
MAR	3.100	5.300	5.300	5.100	4.900	5.200
APR	5.600	2.800	3.300	3.100	3.300	3.100
MAY	3.600	3.400	4.000	4.400	4.000	4.700
JUN	2.200	2.100	2.000 <T	2.100	2.300	2.100
JUL	2.600	2.100	2.200	2.100	2.100	2.400
AUG	4.300	4.500	4.300	4.100	4.000	4.300
SEP	4.800	5.000	5.400	5.500	5.900	5.700
OCT	4.400	4.500	4.800	4.200	4.800	4.900
NOV	4.600	5.400	4.970	5.000	5.200	5.500
DEC	2.800	3.500	3.100	3.100	3.200	3.700
THALLIUM (UG/L)			DET'N LIMIT = .010		GUIDELINE = 13. (D4)	
JAN	BDL	BDL	BDL	BDL	.020 <T	.010 <T
FEB	BDL	.020 <T	.030 <T	.010 <T	.020 <T	.030 <T
MAR	.010	.040	.020	.020	.010	.010
APR	BDL	BDL	BDL	BDL	BDL	BDL
MAY	BDL	BDL	BDL	BDL	BDL	BDL
JUN	BDL	BDL	BDL	BDL	BDL	BDL
JUL	BDL	BDL	BDL	BDL	BDL	BDL
AUG	.020 <T	BDL	BDL	BDL	BDL	BDL
SEP	BDL	BDL	BDL	BDL	BDL	.020 <T
OCT	BDL	BDL	BDL	BDL	BDL	BDL
NOV	BDL	BDL	.020 <T	BDL	.030 <T	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT				DISTRIBUTION SYSTEM	
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	.020 <T	.020 <T	.020 <T	BDL	BDL	BDL
URANIUM (UG/L)			DET'N LIMIT = .020		GUIDELINE = 20. (A2)	
JAN	.360	.370	.340	.370	.390	.350
FEB	.360	.370	.340	.330	.350	.370
MAR	.360	.340	.380	.340	.270	.350
APR	.390	.400	.350	.380	.390	.370
MAY	.270	.300	.310	.300	.310	.280
JUN	.350	.420	.410	.360	.360	.410
JUL	.340	.340	.350	.330	.350	.350
AUG	.330	.380	.390	.360	.370	.380
SEP	.320	.310	.350	.340	.270	.300
OCT	.340	.280	.360	.400	.410	.400
NOV	.330	.400	.330	.340	.310	.420
DEC	.410	.380	.360	.430	.370	.420
VANADIUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = 100 (N)	
JAN	.330 <T	.380 <T	.350 <T	.360 <T	.440	.410
FEB	.250 <T	1.000	.230 <T	.240 <T	.300 <T	.230 <T
MAR	.240	.390	.390	.290	.360	.340
APR	.250 <T	.320 <T	.240 <T	.250 <T	.380 <T	.290 <T
MAY	.230 <T	.350 <T	.290 <T	.260 <T	.280 <T	.280 <T
JUN	.210 <T	.380 <T	.290 <T	.310 <T	.240 <T	.350 <T
JUL	.330 <T	.430 <T	.350 <T	.370 <T	.370 <T	.310 <T
AUG	.320 <T	.500 <T	.390 <T	.400 <T	.340 <T	.350 <T
SEP	.250 <T	.500 <T	.300 <T	.300 <T	.360 <T	.360 <T
OCT	.290 <T	.460 <T	.310 <T	.290 <T	.450 <T	.390 <T
NOV	.230 <T	1.000	.310 <T	.310 <T	.420 <T	.370 <T
DEC	.340 <T	.480 <T	.300 <T	.290 <T	.080 <T	.330 <T
ZINC (UG/L)			DET'N LIMIT = .001		GUIDELINE = 5000. (A3)	
JAN	2.800	1.900	2.300	1.400	9.100	2.000
FEB	2.500	2.100	1.900	1.100	8.300	1.900
MAR	2.500	1.400	2.300	1.800	10.000	1.700
APR	2.200	1.800	3.100	1.800	12.000	1.900
MAY	1.700	1.200	2.100	1.600	5.400	1.500
JUN	3.400	2.100	2.700	2.000	7.600	2.500
JUL	2.900	2.200	3.500	2.000	10.000	2.000
AUG	3.000	1.600	7.100	1.900	10.000	1.900
SEP	2.800	2.400	5.800	3.200	11.000	2.500
OCT	1.900	1.300	2.800	1.100	11.000	2.100
NOV	2.300	2.000	2.550	2.200	9.000	2.200

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
			SITE 1		SITE 2	
	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	3.500	2.000	7.000	2.900	11.000	2.100

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
CHLOROAROMATICS						
HEXACHLOROETHANE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 1900 (D4)	
JAN	BDL	BDL	.	BDL	.	4.000 <T
FEB	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	BDL	.	BDL
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	ILA	.	BDL	.	BDL
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	IQU	IQU	.	IQU	.	IQU

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
PAH						
BENZO(E) PYRENE (NG/L)			DET'N LIMIT = 50.000		GUIDELINE = 2.8 (D4T)	
JAN	BDL	BDL	.	.	.	.
FEB	BDL	BDL	.	.	.	.
MAR	BDL	BDL	.	.	.	.
APR	50.000 <T	BDL	.	.	.	.
MAY	BDL	BDL	.	.	.	.
JUN	BDL	BDL	.	.	.	.
JUL	BDL	BDL	.	.	.	.
AUG	BDL	BDL	.	.	.	.
SEP	BDL	BDL	.	.	.	.
OCT	BDL	BDL	.	.	.	.
NOV	BDL	BDL	.	.	.	.
DEC	BDL	BDL	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
PESTICIDES & PCB						
ALPHA BHC (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 700 (G)	
JAN	2.000 <T	1.000 <T	.	2.000 <T	.	2.000 <T
FEB	3.000 <T	3.000 <T	.	1.000 <T	.	2.000 <T
MAR	2.000 <T	2.000 <T	.	2.000 <T	.	3.000 <T
APR	3.000 <T	2.000 <T	.	2.000 <T	.	1.000 <T
MAY	BDL	BDL	.	BDL	.	BDL
JUN	3.000 <T	2.000 <T	.	3.000 <T	.	3.000 <T
JUL	BDL	4.000 <T	.	3.000 <T	.	BDL
AUG	2.000 <T	ILA	.	3.000 <T	.	3.000 <T
SEP	1.000 <T	2.000 <T	.	2.000 <T	.	2.000 <T
OCT	BDL	BDL	.	BDL	.	BDL
NOV	2.000 <T	2.000 <T	.	2.000 <T	.	2.000 <T
DEC	IQU	IQU	.	IQU	.	IQU
LINDANE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 4000 (A1)	
JAN	BDL	BDL	.	BDL	.	BDL
FEB	BDL	1.000 <T	.	BDL	.	BDL
MAR	1.000 <T	3.000 <T	.	1.000 <T	.	1.000 <T
APR	BDL	BDL	.	BDL	.	BDL
MAY	BDL	BDL	.	BDL	.	BDL
JUN	1.000 <T	BDL	.	1.000 <T	.	1.000 <T
JUL	BDL	2.000 <T	.	1.000 <T	.	BDL
AUG	2.000 <T	ILA	.	2.000 <T	.	1.000 <T
SEP	BDL	BDL	.	3.000 <T	.	1.000 <T
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	IQU	IQU	.	IQU	.	IQU
ATRAZINE (NG/L)			DET'N LIMIT = 50.00		GUIDELINE = 60000 (B3)	
JAN	BDL	BDL	.	BDL	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	BDL	.	BDL
APR	160.000 <T	140.000 <T	.	BDL	.	BDL
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	BDL
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	60.000 <T	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
PHENOLICS (UG/L)	PHENOLICS		DET'N LIMIT = 0.2		GUIDELINE = 2.00 (A3)	
JAN	BDL	BDL	.	.	.	.
FEB	.600 <T	.600 <T	.	.	.	.
MAR	BDL	BDL	.	.	.	.
APR	1.000	1.600	.	.	.	.
MAY	1.200	1.000 <T	.	.	.	.
JUN	1.600	1.000 <T	.	.	.	.
JUL	1.400	1.000 <T	.	.	.	.
AUG	2.000	1.600	.	.	.	.
SEP	.600 <T	.400 <T	.	.	.	.
OCT	.600 <T	.400 <T	.	.	.	.
NOV	.200 <T	.600 <T	.	.	.	.
DEC	1.600	1.000	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
VOLATILES						
TOLUENE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 24.0 (B4)		
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	ISM	.	BDL
MAY	.100 UCS	BDL	.	BDL	.	.050 UCS
JUN	BDL	BDL	.	.050 <T	.	.050 <T
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	BDL	.	.050 <T	.	.050 <T
SEP	BDL	.050 <T	.	.200 <T	.	.100 <T
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	.400 <T	.	BDL
DEC	BDL	.100 <T	.	BDL	.	BDL
ETHYLBENZENE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 2.4 (B4)		
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	ISM	.	BDL
MAY	.050 <T	.100 <T	.	.050 <T	.	.050 <T
JUN	BDL	BDL	.	.050 <T	.	.100 <T
JUL	BDL	.050 <T	.	.050 <T	.	.050 <T
AUG	BDL	.100 <T	.	.100 <T	.	BDL
SEP	BDL	.050 <T	.	.050 <T	.	.050 <T
OCT	BDL	BDL	.	.100 <T	.	BDL
NOV	BDL	BDL	.	.050 <T	.	.100 <T
DEC	BDL	.050 <T	.	BDL	.	.100 <T
M-XYLENE (UG/L)		DET'N LIMIT = .100		GUIDELINE = 300 (B4)		
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	ISM	.	BDL
MAY	.100 <T	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	.100 <T	.	BDL
AUG	BDL	BDL	.	.100 <T	.	BDL
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
O-XYLENE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 300 (B4)		
MAR	ITX	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	ISM	.	BDL
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	.050 <T	.	BDL	.	BDL
SEP	.050 <T	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
STYRENE (UG/L)			DET'N LIMIT = .050	GUIDELINE = 46.5 (D2)		
SEP	BDL	.250 <T	.	.150 <T	.	.450 <T
OCT	BDL	.200 <T	.	.200 <T	.	.150 <T
NOV	BDL	BDL	.	.100 <T	.	.100 <T
DEC	BDL	.150 <T	.	.100 <T	.	.300 <T
T1,2DICHLOROETHYLENE (UG/L)			DET'N LIMIT = .100	GUIDELINE = 350 (D3)		
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	ISM	.	BDL
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	BDL
SEP	BDL	.100 <T	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
CHLOROFORM (UG/L)			DET'N LIMIT = .100	GUIDELINE = 350 (A1+)		
MAR	ITX	ITX	.	ITX	.	ITX
APR	BDL	9.300	.	ISM	.	11.200
MAY	BDL	13.800	.	13.500	.	13.300
JUN	BDL	12.400	.	11.500	.	14.400
JUL	BDL	14.300	.	14.700	.	19.500
AUG	BDL	17.300	.	17.500	.	18.500
SEP	.100 <T	12.800	.	14.500	.	14.200
OCT	BDL	11.400	.	9.700	.	10.400
NOV	BDL	9.600	.	9.100	.	8.900
DEC	BDL	7.300	.	6.900	.	46.900
DICHLOROBROMOMETHANE (UG/L)			DET'N LIMIT = .050	GUIDELINE = 350 (A1+)		
MAR	BDL	ITX	.	ITX	.	ITX
APR	BDL	10.600	.	ISM	.	9.700
MAY	BDL	10.600	.	10.400	.	10.600

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DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
JUN	BDL	9.300	.	8.350	.	10.200
JUL	BDL	9.600	.	10.050	.	11.000
AUG	BDL	11.900	.	11.050	.	11.600
SEP	BDL	9.800	.	10.700	.	10.550
OCT	BDL	9.500	.	7.600	.	8.600
NOV	BDL	8.800	.	8.000	.	8.450
DEC	BDL	7.300	.	6.850	.	4.500
CHLORODIBROMOMETHANE (UG/L)			DET'N LIMIT = .100		GUIDELINE = 350 (A1+)	
MAR	BDL	ITX	.	ITX	.	ITX
APR	BDL	BDL	.	ISM	.	3.700
MAY	BDL	5.000	.	5.000	.	5.000
JUN	BDL	5.500	.	5.300	.	5.300
JUL	BDL	4.500	.	4.900	.	5.100
AUG	BDL	6.000	.	5.600	.	5.500
SEP	BDL	5.000	.	5.300	.	5.300
OCT	BDL	4.900	.	4.200	.	5.900
NOV	BDL	5.100	.	4.800	.	5.300
DEC	BDL	4.000	.	4.000	.	.300 <T
T-CHLOROETHYLENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 10.0 (C2)	
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	4.000	.	ISM	.	BDL
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	BDL
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
BROMOFORM (UG/L)			DET'N LIMIT = .200		GUIDELINE = 350 (A1+)	
MAR	BDL	ITX	.	ITX	.	ITX
APR	BDL	.200 <T	.	ISM	.	BDL
MAY	BDL	.600 <T	.	.400 <T	.	.400 <T
JUN	BDL	.400 <T	.	.400 <T	.	.400 <T
JUL	BDL	.600 <T	.	.400 <T	.	.400 <T
AUG	BDL	.600 <T	.	.600 <T	.	.400 <T
SEP	BDL	.600 <T	.	.600 <T	.	.600 <T
OCT	BDL	.600 <T	.	.600 <T	.	.600 <T
NOV	BDL	.600 <T	.	.600 <T	.	.600 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM HAMILTON WSS 1988

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	BDL	.600 <T	.	.600 <T	.	BDL
TOTL TRIHALOMETHANES (UG/L)		DET'N LIMIT = .500		GUIDELINE = 350 (A1)		
MAR	BDL	ITX	.	ITX	.	ITX
APR	BDL	24.100	.	ITX	.	24.600
MAY	BDL	30.000	.	29.300	.	29.300
JUN	BDL	27.600	.	25.550	.	30.300
JUL	BDL	29.000	.	30.050	.	36.000
AUG	BDL	35.800	.	34.750	.	36.000
SEP	BDL	28.200	.	31.100	.	30.650
OCT	BDL	26.400	.	22.100	.	25.500
NOV	BDL	24.100	.	22.500	.	23.250
DEC	BDL	19.200	.	18.350	.	51.700

Table 6

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
BACTERIOLOGICAL			
STANDARD PLATE COUNT MEMBRANE FILTRATION	CT/ML	0	500/ML(A1)
P/A BOTTLE		0	0 (A1*)
TOTAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	5/100mL(A1)
TOTAL COLIFORM BACKGROUND MF	CT/100ML	0	N/A
CHLOROAROMATICS			
HEXACHLOROBUTADIENE	MG/L	1.000	450. (D4)
1,2,3-TRICHLOROBENZENE	MG/L	5.000	10000 (I)
1,2,3,4-TETRACHLOROBENZENE	MG/L	1.000	10000 (I)
1,2,3,5-TETRACHLOROBENZENE	MG/L	1.000	10000 (I)
1,2,4-TRICHLOROBENZENE	MG/L	5.000	10000 (I)
1,2,4,5-TETRACHLOROBENZENE	MG/L	1.000	38000 (D4)
1,3,5-TRICHLOROBENZENE	MG/L	5.000	10000 (D4)
HEXACHLOROBENZENE	MG/L	1.0	10. (C1)
HEXACHLOROETHANE	MG/L	1.000	1900. (D4)
OCTACHLOROSTYRENE	MG/L	1.000	N/A
PENTACHLOROBENZENE	MG/L	1.000	74000 (D4)
2,3,6-TRICHLOROTOLUENE	MG/L	5.000	N/A
2,4,5-TRICHLOROTOLUENE	MG/L	5.000	N/A
2,6,A-TRICHLOROTOLUENE	MG/L	5.000	N/A
CHLOROPHENOLS			
2,3,4-TRICHLOROPHENOL	MG/L	50.	N/A
2,3,4,5-TETRACHLOROPHENOL	MG/L	50.	N/A
2,3,5,6-TETRACHLOROPHENOL	MG/L	50.	N/A
2,4,5-TRICHLOROPHENOL	MG/L	50.	2600000 (D4)
2,4,6-TRICHLOROPHENOL	MG/L	50.	5000. (B1)
PENTACHLOROPHENOL	MG/L	50.	60000. (B1)
CHEMISTRY (FLD)			
FIELD COMBINED CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD FREE CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD TOTAL CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD PH	DIMENSLESS	N/A	6.5-8.5(A4)
FIELD TEMPERATURE	°C	N/A	<15 °C(A1)
FIELD TURBIDITY	FTU	N/A	1.0 (A1)
CHEMISTRY (LAB)			
ALKALINITY	MG/L	.200	30-500(A4)
CALCIUM	MG/L	.100	100. (F2)
CYANIDE	MG/L	.001	.20(A1)
CHLORIDE	MG/L	.200	250. (A3)
COLOUR	TCU	.5	5.0 (A3)
CONDUCTIVITY	UMHO/CM	1.	400. (F2)
FLUORIDE	MG/L	.01	2.4 (A1)
HARDNESS	MG/L	.50	80-100(A4)
MAGNESIUM	MG/L	.05	30. (F2)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
NITRITE	MG/L	.001	1.0 (A1)
TOTAL NITRATES	MG/L	.02	10. (A1)
NITROGEN TOTAL KJELDAHL	MG/L	.02	N/A
PH	DIMENSLESS	N/A	6.5-8.5(A4;
PHOSPHORUS FIL REACT	MG/L	.0005	N/A
PHOSPHORUS TOTAL	MG/L	.002	.40(F2)
TOTAL SOLIDS	MG/L	1.	500. (A3)
TURBIDITY	FTU	.02	1.0 (A1)
METALS			
ALUMINUM	UG/L	.050	100. (A4)
ANTIMONY	UG/L	.050	146. (D4)
ARSENIC	UG/L	.050	50. (A1)
BARIUM	UG/L	.020	1000. (A1)
BORON	UG/L	.200	5000. (A1)
BERYLLIUM	UG/L	.010	0.20 (H)
CADMIUM	UG/L	.050	5.0 (A1)
COBALT	UG/L	.020	1000. (H)
CHROMIUM	UG/L	.100	50. (A1)
COPPER	UG/L	.100	1000. (A3)
IRON	UG/L	5.0	300. (A3)
MERCURY	UG/L	.01	1.0 (A1)
MANGANESE	UG/L	.050	50. (A3)
MOLYBDENUM	UG/L	.020	500. (H)
NICKEL	UG/L	.100	50. (F3)
LEAD	UG/L	.020	50. (A1)
SELENIUM	UG/L	.200	10. (A1)
SILVER	UG/L	.020	50. (A1)
STRONTIUM	UG/L	.100	2000. (H)
THALLIUM	UG/L	.010	13. (D4)
TITANIUM	UG/L	.100	N/A
URANIUM	UG/L	.020	20. (A2)
VANADIUM	UG/L	.020	100. (H)
ZINC	UG/L	.020	5000. (A3)
PHENOLICS			
PHENOLICS (UNFILTERED REACTIVE)	UG/L	.2	2.0 (A3)
PESTICIDES & PCB			
ALDRIN	NG/L	1.0	700. (A1)
AMETRINE	NG/L	50.	300000. (D3)
ATRAZINE	NG/L	50.	60000. (B3)
ALPHA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	700. (G)
BETA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	300. (G)
GAMMA HEXACHLOROCYCLOHEXANE(LINDANE)	NG/L	1.0	4000. (A1)
ALPHA CHLORDANE	NG/L	2.0	7000. (A1)
GAMMA CHLORDANE	NG/L	2.0	7000. (A1)
BLADEX	NG/L	100.	10000. (B3)
DIELDRIN	NG/L	2.0	700. (A1)
METHOXYCHLOR	NG/L	5.0	100000. (A1)
ENDOSULFAN 1 (THIODAN I)	NG/L	2.0	74000. (D4)
ENDOSULFAN 2 (THIODAN II)	NG/L	4.0	74000. (D4)
ENDRIN	NG/L	4.0	200. (A1)
ENDOSULFAN SULPHATE(THIODAN SULPHATE)	NG/L	4.0	N/A
HEPTACHLOR EPOXIDE	NG/L	1.0	3000. (A1)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
HEPTACHLOR	MG/L	1.0	3000.	(A1)
METOLACHLOR	MG/L	500.	50000.	(B3)
MIREX	MG/L	5.0	N/A	
OXYCHLORDANE	MG/L	2.0	N/A	
O,P-DDT	MG/L	5.0	30000.	(A1)
PCB	MG/L	20.0	3000.	(A2)
O,P-DDD	MG/L	5.0	N/A	
PPDDE	MG/L	1.0	30000.	(A1)
PPDDT	MG/L	5.0	30000.	(A1)
ATRATONE	MG/L	50.	N/A	
ALACHLOR	MG/L	500.	35000.	(D2)
PROMETONE	MG/L	50.	52500.	(D3)
PROPAZINE	MG/L	50.	16000.	(D2)
PROMETRYNE	MG/L	50.	1000.	(B3)
SENCOR (METRIBUZIN)	MG/L	100.	80000.	(B2)
SIMAZINE	MG/L	50.	10000.	(B3)
POLYAROMATIC HYDROCARBONS				
PHENANTHRENE	MG/L	10.0	N/A	
ANTHRACENE	MG/L	1.0	N/A	
FLUORANTHENE	MG/L	20.0	42000.	(D4)
PYRENE	MG/L	20.0	N/A	
BENZO(A)ANTHRACENE	MG/L	20.0	N/A	
CHRYSENE	MG/L	50.0	N/A	
DIMETHYL BENZO(A)ANTHRACENE	MG/L	5.0	N/A	
BENZO(E)PYRENE	MG/L	50.0	N/A	
BENZO(B)FLUORANTHENE	MG/L	10.0	N/A	
PERYLENE	MG/L	10.0	N/A	
BENZO(K)FLUORANTHENE	MG/L	1.0	N/A	
BENZO(A)PYRENE	MG/L	5.0	10.	(B1)
BENZO(G,H,I)PERYLENE	MG/L	20.0	N/A	
DIBENZO(A,H)ANTHRACENE	MG/L	10.0	N/A	
INDENO(1,2,3-C,D)PYRENE	MG/L	20.0	N/A	
BENZO(E)CHRYSENE	MG/L	2.0	N/A	
CORONENE	MG/L	10.0	N/A	
SPECIFIC PESTICIDES				
TOXAPHENE	MG/L	N/A	5000.	(A1)
2,4,5-TRICHLOROBUTYRIC ACID (2,4,5-T)	MG/L	50.	280000.	(B1)
2,4-DICHLOROBUTYRIC ACID (2,4-D)	MG/L	100.	100000.	(A1)
2,4-DICHLOROPHENOXYBUTYRIC ACID	MG/L	200.	18000.	(B3)
2,4-D PROPIONIC ACID	MG/L	100.	N/A	
DICAMBA	MG/L	100.	87000.	(B3)
PICHLORAM	MG/L	100.	2450000.	(D3)
SILVEX (2,4,5-TP)	MG/L	50.	10000.	(A1)
DIAZINON	MG/L	20.	14000.	(A1)
DICHLOROVOS	MG/L	20.	N/A	
DURSBAN	MG/L	20.	N/A	
ETHION	MG/L	20.	35000.	(G)
GUTHION	MG/L	N/A	N/A	
MALATHION	MG/L	20.	160000.	(G)
MEVINPHOS	MG/L	20.	N/A	
METHYL PARATHION	MG/L	50.	7000.	(B3)
METHYLTRITHION	MG/L	20.	N/A	
PARATHION	MG/L	20.	35000.	(B1)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
PHORATE (THIMET)	NG/L	20.	35. (D2)
RELDAN	NG/L	20.	N/A
RONNEL	NG/L	20.	N/A
AMINOCARB	NG/L	N/A	N/A
BENOMYL	NG/L	N/A	N/A
BUX (METALKAMATE)	NG/L	2000.	N/A
CARBOFURAN	NG/L	2000.	18000. (D3)
CICP (CHLORPROPHAM)	NG/L	2000.	350000. (G)
DIALLATE	NG/L	2000.	30000. (H)
EPTAM	NG/L	2000.	N/A
IPC	NG/L	2000.	N/A
PROPOXUR (BAYGON)	NG/L	2000.	90000. (G)
SEVIN (CARBARYL)	NG/L	200.	70000. (A1)
SUTAN (BUTYLATE)	NG/L	2000.	245000. (D3)
VOLATILES			
BENZENE	UG/L	.050	5.0 (B1)
TOLUENE	UG/L	.050	24.0 (B4)
ETHYLBENZENE	UG/L	.050	2.4 (B4)
PARA-XYLENE	UG/L	.100	300. (B4)
META-XYLENE	UG/L	.100	300. (B4)
ORTHO-XYLENE	UG/L	.050	300. (B4)
1,1-DICHLOROETHYLENE	UG/L	.100	7.0 (D1)
ETHLYENE DIBROMIDE	UG/L	.05	50. (G)
METHYLENE CHLORIDE	UG/L	.500	1750. (D3)
TRANS-1,2-DICHLOROETHYLENE	UG/L	.100	350. (D3)
1,1-DICHLOROETHANE	UG/L	.100	N/A
CHLOROFORM	UG/L	.100	350. (A1+)
1,1,1-TRICHLOROETHANE	UG/L	.020	200. (D1)
1,2-DICHLOROETHANE	UG/L	.050	5.0 (D1)
CARBON TETRACHLORIDE	UG/L	.200	5.0 (D1)
1,2-DICHLOROPROPANE	UG/L	.050	10.0 (G)
TRICHLOROETHYLENE	UG/L	.100	5.0 (D1)
DICHLOROBROMOMETHANE	UG/L	.050	350. (A1+)
1,1,2-TRICHLOROETHANE	UG/L	.050	.60(D4)
CHLORODIBROMOMETHANE	UG/L	.100	350. (A1+)
TETRACHLOROETHYLENE	UG/L	.050	10.0 (C2)
BROMOFORM	UG/L	.200	350. (A1+)
1,1,2,2-TETRACHLOROETHANE	UG/L	.050	0.17(D4)
CHLOROBENZENE	UG/L	.100	1510. (D3)
1,4-DICHLOROBENZENE	UG/L	.100	5.0 (B1)
1,3-DICHLOROBENZENE	UG/L	.100	130. (G)
1,2-DICHLOROBENZENE	UG/L	.050	200. (B1)
TRIFLUOROCHLOROTOLUENE	UG/L	.100	N/A
TOTAL TRIHALOMETHANES	UG/L	.500	350. (A1)
STYRENE	UG/L	.05	46.5 (D2)